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The Canadian Practitioner and Review

ADAM H. WRIGHT. B.A., M.D.

W. H. B. AIKINS, M.D.

EDMUND E. KING, M.D.

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List of Contributors

- Aikins, W. H. B., M.D., Toronto.
 Alexander, J. F., M.D., West Blockton, Ala.
 Anglin, W. G., M.D., Kingston.
 Asch, Robert, M.D., Breslau.
 Bingham, G. A., M.D., Toronto.
 Buchanan, Robert J. M., M.D., Liverpool, England.
 Campbell, Collin, M.D., Toronto.
 Casgrain, H. R., M.D., Windsor.
 Cathelin, Prof. F., M.D., Paris, France.
 Chambers, Graham, M.B., Toronto.
 Clarkson, F. A., M.D., Toronto.
 Coleman, R. H., M.D., Toronto.
 Cunningham, C. Willett, M.B.
 Dobbie, W. J., M.D.C.M., Toronto.
 Duncan, J. H., M.D., Toronto.
 Duncan, J. T., M.D., Toronto.
 Elliott, J. H., M.B., Toronto.
 Fearnley, Allan B., M.D.
 Fenton, Frederick, M.D., Toronto.
 Goldie, William, M.B. Toronto.
 Greig, W. J., M.D., Toronto.
 Harrison, F. C., M.B., Toronto.
 Henderson, V. E., M.D., Toronto.
 Hirtz, Edgard, M.D., Paris, France.
 Hunter, John, M.B., Toronto.
 King, Edmund E., M.D., Toronto.
 Knott, John, M.D., Dublin, Ireland.
 Lucy, Robert, M.D., Guelph.
 Macmurchy, Helen, M.D., Toronto.
 Manton, W. P., M.D., Detroit, Mich.
 Montgomery, Douglas W., M.D., San Francisco.
 Morton, J. P., M.D., Hamilton.
 Mullin, W. Huerner, M.D., Hamilton.
 McCann, Frederick, M.D., Toronto.
 McFarlane, Murray, M.D., Toronto.
 McIlwraith, K. C., M.D., Toronto.
 Neal, F. C. M.B. Peterborough.
 Newell, James, M.D., Watford, Ont.
 Oldright, William, M.D., Toronto.
 O'Reilly, Brefney, M.D., Toronto.
 Parry, John R., M.B., Hamilton.
 Parsons, Harold C., M.R.C.P., Toronto.
 Pelton, Henry Hubbard, M.D., New York.
 Powell, N. A., M.D., Toronto.
 Power, D'Arcy, F.R.C.S.
 Price-Brown, J., M.D., Toronto.
 Riddell, Hon. Mr. Justice Wm., Toronto.
 Rosebrugh, A. M., M.D., Toronto.
 Rudolf, R. D., M.D., Toronto.
 Ryerson, E. Stanley, M.D., Toronto.
 Shuttleworth, C. B., M.D., Toronto.
 Smith, D. King, M.B., Toronto.
 Sprague, James S., M.D., Perth.
 Starr, F. N. G., M.B., Toronto.
 Von Tabora, D., M.D., Germany.
 Wallace, W. T., M.B., Berlin.
 Whitby, Charles J., M.D., London, Eng.
 White, William Charles, M.D., Pittsburg, Pa.
 Wright, Adam H., M.D., Toronto.
 Wylie, Andrew, M.D.
 Wynter, W. Essex, M.D., London, Eng.

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Original Communications

RECENT OBSERVATIONS ON THE THERAPEUTIC USE OF RADIUM

By DR. W. H. B. AIKINS, TORONTO,

Consulting Physician to Toronto General Hospital, King Edward Sanitarium, etc.

In collaboration with

F. C. HARRISON, B.A., M.B., TORONTO,

Physician to Hospital for Incurables, Assistant in Pharmacology, University of Toronto.

From the results recently published by Drs. Louis Wickham and Degrais of Paris, and by Dr. Robt. Abbe of New York, it has been abundantly proven that radium has a distinct place in therapeutics, and, moreover, a place which it seems probable will be gradually extended so as to include many conditions which formerly seemed beyond its scope.

It has been the experience of all workers with this agent that on superficial epitheliomata of the skin its action is specific. The histological changes in the cancer cells following the application of the radium rays are peculiar to themselves and quite unlike those following the use of X-rays, leucodescent light and other agents. It is true that some cases can be treated with good results by excision, the use of arsenical pastes or X-ray, but we have had cases which, after all these methods have proved inefficient, have healed readily after short applications of radium.

In the treatment of erectile angiomata and naevi, excellent results have also been obtained. Dr. Wickham has reported several hundred cases of all forms of birthmarks, from port wine stains to vascular and pulsating angiomata, which have been reduced so that the skin is almost a normal color, and this without destructive cicatrix. In these cases, however, the treatment is often prolonged, as it is necessary to avoid anything approaching a destruction of the skin. The beneficial effect is due to its irritating action, producing obliterative endarteritis and fibroid change.

On true keloidal tissues radium seems to exercise again its selective action and cause the ready disappearance of these disfiguring hypertrophies of scar tissue.

Various other affections of the skin respond to radium treatment after other methods have failed. Thus it has been our own experience as well as that of others that in the treatment of lupus, chronic eczema, psoriasis, sycosis, acne rosacea and acne keloid radium is an invaluable agent.

A case of a tuberculous ulcer on the finger of a confrere which had resisted all treatment may also be mentioned. It healed readily with a few applications of a strong radium plaque. Treatment in these conditions of the skin must be very carefully conducted, as we aim to avoid anything approaching a too destructive action.

Dr. Abbe was the first to employ the method of introducing tubes containing the radium salts into the centres of tumors, and this method he has particularly employed with excellent results in cases of sarcomata. Dr. Wickham, of Paris, has also used the same method and with equally good results.

This brings us to what seems to be the great hope from radium treatment. It is the combination of surgery with the use of radium. The surgeon can devise methods by which the apparatus may be brought into contact with deep lying malignant growths, particularly those in the various hollow viscera, such as the stomach, bladder, rectum and uterus, as well as the liver and other organs. Cases are reported in which, by such a combination, either an inoperable case has been converted into an operable one, or after the surgeon has removed all he could, radium has been used with good effect on the malignant tissues remaining.

Furthermore, radium has been used after operation for malignant growths, infiltrating the operative area with the rays, so as to kill any cancer cells which may have been missed at the time of operation. Naturally in such cases the question can never be determined as to the necessity or value of the use of radium in any particular case. There might have been no recurrence without its use, but when, as has been reported, recurrence has appeared two or three times, and finally after radium treatment it has not appeared in the same patient, one cannot help but feel that a large share of the eventual good result should be ascribed to the action of the radium rays.

RODENT ULCERS AND EPITHELIOMATA.

Of rodent ulcers we have had experience with seventeen. Without exception excellent results have been or are being

obtained. In ten a record of previous treatment with pastes, X-rays, or leucodescent light, was admitted, but no permanent curative result had followed. It is hardly necessary to go into the minute details of all these cases. After a short application of the radium plaque, the small ulcers have almost invariably crusted over in ten to fourteen days, and when this crust detached itself the skin underneath was healed and smooth and of a pinkish tint, which soon faded to the normal color of the skin. These patients should be seen subsequently, as in cases where a slight thickening of the tissues remains an application of the rays to produce a deeper penetration without an ulcerative effect is desirable, in order to insure a good result.

Where the ulceration is more extensive, longer and more frequent applications are necessary. The treatment in these cases sometimes extends over several months, as it is necessary to feel one's way very cautiously. One such case was as follows:

Miss G., 32, referred by Dr. H. B. Anderson, came under observation Aug. 28, 1910. Since birth she had had an ulcerated area in the right temporal region. It increased gradually as a child, and from the age of ten until the present she had been under treatment of various kinds. It has twice been excised, and pastes, X-rays and leucodescent light have all been tried. It would improve, but that was all. Among those who have seen this case there is a difference of opinion as to the true condition. The early age at which it began would suggest a lupoid character, but the appearance in August suggested rather a rodent type. Dr. Louis Wickham saw the case after some radium therapy had been employed, but would not give a definite diagnosis. He expressed the opinion that it was probably of lupoid character to start with, but had taken on the character of the rodent ulcer.

When first seen there was an area of scar tissue on the right temple the shape of an equilateral triangle of one inch and a half to each side. In this area, $\frac{3}{4}$ of an inch behind the eye, was an ulcer $\frac{3}{8}$ of an inch in diameter punched out with thickened and slightly undermined edges. The floor was covered with pale, unhealthy looking granulations, and there was a sero-purulent discharge. Behind this ulcer, at the lower angle of the area, was another smaller ulcer of similar appearance, and just at the angle of the eye was a small ulcer, the size of a pin's head.

A strong plaque, screened, was used several times, and then the patient went home. She was seen again at the end of September. There had been a good deal of surface reaction, and a crust had formed over all the ulcers. No further treatment was

given at this time. At the end of October she reported again. The crust was still present, but was easily removed, and underneath the skin was formed slightly thicker than normal and redder, but with absolutely no ulceration. The parts were radiated again, using heavier screens in order to get a deep action and soften up the tissues.

It is, of course, too early to say whether this result will be permanent, but from other cases reported in the French literature we can see no reason why it should not be.

The early result here points to the condition being one of rodent ulcer rather than lupus, as experience has shown that the latter do not react so readily as the former to the action of the radium rays.

To show the result with the common rodent ulcer, the following cases may be given as examples:

Mrs. L., referred by Dr. W. B. Thistle, presented a rodent ulcer on the left side of the nose of four years' duration, which had resisted all treatment. Within one month after a series of radium applications the ulcer healed, and is still so at the time of writing, seven months after she was first seen.

Mr. M., of New Orleans, referred by Dr. Allen Baines, showed four typical rodent ulcers on the left cheek and one on the skin of the upper lip. They had been present for two years. He was given applications of a plaque of 500,000 activity, eight hours to each spot, extending over a period of two weeks. At the end of that time the radium crusts had formed.

Under date of Nov. 29th, the patient writes from New Orleans: "It affords me much pleasure to advise you that all trace of the affection has vanished, not even the smallest trace of a scar can be seen."

Mrs. R., referred by Dr. W. P. Caven, had a small nodule on the left side of the nose. It appeared two years ago and had increased in size until it was three-eighths of an inch in diameter. It was not ulcerated. It had begun to pain a short time before. She had had no treatment of any kind. She was given a short application of a strongly active plaque, and on presenting herself six weeks later the nodule had quite disappeared.

Mrs. D., referred by Dr. J. Noble, rodent ulcer of the forehead; crust has formed, but is not yet detached.

Miss F., referred by Dr. Yeo, rodent ulcer at the tip of the nose, causing great disfigurement, which has completely healed, leaving no scar.

Mrs. C., referred by Dr. F. A. Clarkson, small rodent ulcer just below the eye, which quickly responded to treatment.

Mrs. M., referred by Dr. Barber, of Burk's Falls, rodent ulcer of temporal region. Radium was used on two separate occasions, and the ulcer is now quite healed.

Epithelioma of the Lip.—Two cases of superficial epitheliomata of the lip have responded splendidly to treatment. Other epitheliomata have been referred on which prolonged treatment will have to be carried out, and on which we hope to report more fully later. To mention a few:

Mrs. B., referred by Dr. S. M. Hay, for an epithelioma of the buccal mucous membrane, which had recurred after removal. She was seen six weeks after treatment, and there had been no re-appearance; she will, however, have to be kept under observation from time to time.

A case of epithelioma of the lip, with glandular involvement, considered inoperable, referred by Dr. Howitt, Guelph:

Mr. B., referred by Dr. Partridge, of Burk's Falls, with a recurring epithelioma of the buccal mucous membrane.

Mr. A., referred by Dr. N. A. Powell. It is an epithelioma of the lip in which extensive dissection had been done. There was constant pain and two masses which had recently begun to increase in size. Since beginning treatment the pain has ceased, but it is too early to report further as yet.

Fungating Epitheliomata.—Fungating cutaneous epitheliomata are particularly suited for radium action, and various techniques can be adopted depending on the individual case under observation. "Cross-fire" action often gives excellent results with the use of different forms of filters. A preliminary curettage and removal of the vegetations is of help in decreasing the time required for cure, but is not absolutely necessary.

T. F. T., æt. 54, referred by Dr. Bowman, of Penetanguishene, Ont., presented on Oct. 29th a fungating mass, as large as a fifty cent piece, below and behind the left ear. There had been a small ulcer for about five years, but latterly the growth had been very rapid. The growth was covered with cauliflower excrescences, and projected $\frac{3}{4}$ of an inch above the surrounding skin. The edges were hard and everted, and the tissues about were quite hard, as though the growth extended to some depth. There were no enlarged glands to be felt. Under local anæsthetic the vegetations were removed, and the next day radium applications were made. These were repeated for four days, and then the patient returned home. He was seen again in three weeks, at which time all that was observed was a small, healthy ulcer, one-half inch in diameter. The epithelium was growing over it, and it looked as though it should be healed completely in another

two weeks. The edges were quite soft, as were all the surrounding tissues. A few more applications were made to stimulate the healing, and he again returned home. On December 15th he reported it "practically healed, with only a small crust to be detached."

Melanotic Carcinoma.—Mrs. C., referred by Dr. Chapman, of Kenora, melanotic carcinoma of the left cheek; there has been marked improvement, but the case is still under observation.

Mrs. W., referred by Dr. H. J. Hamilton, melanotic carcinoma of the cheek, as large as a small marble. After three series of treatments it has quite disappeared.

SARCOMATA.

The case described below, together with one other case of cancer of the uterus, forms perhaps the most interesting study we have made.

R. J. B., æt. 53, farmer, referred by Dr. Wardlaw, of Galt, Ont. In February, 1909, he noticed a lump at the angle of the jaw, on the right side. X-rays were used without any apparent effect as the mass kept increasing. In April, 1910, the tumor was removed and showed a small round-celled sarcoma. In June it recurred. Excision was again advised, but as a facial paresis had followed the first operation, the patient would not consider further operative procedures. He was therefore referred for radium treatment.

At first, very thorough radiation was carried out with plaques, and some decrease in the size of the mass could be noticed. The cross-fire method was here used, a plaque being placed on each side of the tumor.

The beginning of October the mass was two inches in diameter and elevated $\frac{3}{4}$ of an inch above the level of the surrounding skin. It was quite firm and seemed attached to the underlying angle of the jaw. On Oct. 5th, an incision was made into the tumor, and a small silver tube containing 1 centigram of pure bromide of radium, with an activity of 2,000,000 was inserted deeply into its centre. It was left in place 24 hours, and the result was most remarkable. At the end of this time there was a cavity present, into which the finger could be inserted, the growth felt much softer and was more freely moveable. From the opening thus made broken down necrotic tissue was discharged, and the size of the tumor visibly diminished. Twelve days after this first treatment the tube was inserted again, two hours daily for six days, with the plaque applied externally to produce the cross-fire action.

The patient then returned home and reported in one month. On inspection no tumor mass could be seen at all. On palpation two small masses, which felt like scar tissue, were present, one just in front of the ear, the other behind the angle of the jaw.

We regard this as a most gratifying result, although the patient can in no sense be regarded as cured, and will be required to be watched from time to time. He would be a foolish man indeed who would make any such claim so soon as this, but others report cases of round-celled sarcoma, removed and free from recurrence after five years, and we see no reason why the same result should not be looked for here.

CANCER OF THE UTERUS.

In many cases of cancer of the uterus radium can be of great service. Dr. Wickham has reported cases regarded as inoperable, which were so reduced as to render a later operation possible, while where there had been recurrence in the scar tissues in the vault of the vagina following operation radium was effectual in removing it. In all cases the most striking effect was the rapidity with which the discharge and pain ceased after a very few applications.

The condition is one that offers itself very readily for treatment, on account of the facility with which the apparatus can be applied. Radium tubes can be introduced into the body of the uterus, or radium plaques can be applied to the cervix. We have ourselves had the opportunity of verifying these beneficial results in the following cases:

A patient, æt. 53, referred by Dr. Tuttle, of Tweed, Ont., first noticed a bloody uterine discharge in January, 1910. She did not consult a physician until June. The cervix was cauterized, but serious hæmorrhage recurred, and in July she underwent an operation at the hands of a leading gynæcologist in Toronto, when the uterus was curetted, and the cervix amputated. This was all that was done, as, in the surgeon's opinion, the left ureter and bladder were involved, and hysterectomy would not be justified. A very grave prognosis was given.

On August 5th she consulted regarding radium treatment. The discharge, pain, and irritability of the bladder had continued. Dr. F. A. Cleland, Assistant Gynæcologist of St. Michael's Hospital, Toronto, was called in consultation, as it was felt that the treatment should be surgical, if possible.

The condition at that date, as reported by Dr. Cleland, was as follows:

"On August 15th, in the vault of the vagina, and where the cervix had been removed, was a raw, bleeding, granular surface, about two inches in diameter, extending into the vaginal wall. The left side was more involved than the right, and in order to remove the growth completely, an extensive dissection would have been required, and probably the removal of the left ureter.

"The uterus was fixed on the left side, and examination by bi-manual method caused a good deal of pain. The body of the uterus was not enlarged.

"In view of the extensive operation which would have been necessary, and the uncertainty of complete removal, radium treatment was advised."

Treatment was accordingly instituted, and from August 15th to October 7th, with two weeks' intermission, a strong radium plaque was placed against the cervix for twelve hours every night. The discharge ceased after the first few applications. The pain disappeared, and the bladder condition improved. On October 7th, a tube containing one centigram of pure bromide of radium in a catheter was inserted into the uterus for fifteen hours. The patient then returned home. Examinations made from time to time had shown a continuous improvement and lessening of the area of ulceration. On November 30th, she reported, and Dr. Cleland again examined her and reported as follows:

"On Nov. 30th, the raw surface was reduced to an area about half an inch in diameter, which showed no tendency to bleed as formerly. The uterus was more moveable, but still somewhat fixed on the left side. The patient reported herself as suffering no pain nor discomfort of any kind, and as having gained about 15 pounds in weight. The improvement in the local condition was most marked, and an operation could now be undertaken with more certainty of success. But, owing to the improvement under the radium treatment, it seems advisable to continue it for some time yet."

EXOPHTHALMIC GOITRE.

Dr. Abbe was the first to employ radium in the treatment of this condition. This was effected by making incisions into the thyroid gland, into which radium tubes were inserted. A great decrease in the size of the gland followed, with amelioration of the nervous symptoms, and this result has continued. Dr. Wickham, of Paris, has also successfully treated cases by the plaques, with "cross-fire."

A case which presented itself recently has given us an opportunity to observe the action of radium in this condition.

Mrs. M., æt. 31, noticed a small lump at the root of the neck five years ago. Local applications were used, but there was no change one way or the other. One month ago it began to grow, particularly on the right side. The tumor protruded and began to cause distress in breathing, speaking and swallowing. At the same time she began to feel tired, with loss of energy and appetite. Examination showed enlargement of the isthmus and right lobes of the thyroid, the tumor being quite hard in consistency. The circumference of the neck was 15 inches. The pulse rate was slightly increased.

Applications of radium plaques have been made, and already within three weeks there has been marked improvement. The tumor has decreased, so that the circumference of the neck is only 13 inches, and the pressure symptoms have quite disappeared. The improvement in this short period of treatment has been so marked that a further decrease in the size of the thyroid can confidently be expected.

POST-OPERATIVE PROPHYLAXIS.

Dr. Wickham, in his latest papers, insists strongly on the association of radium with surgery. He claims that in many cases the radium rays will turn an inoperable case into an operable one, and further, that after operation for malignancy, when, no matter how extensive the dissection, one can never be sure of having removed all the cancerous tissues, radium should be used over the scar, and area of operation, as a prophylactic measure to destroy any stray neoplastic cells.

In three cases we have so applied the treatment, two being sarcomas and one a carcinoma. In the latter case, which affected the breast, the radical operation was performed, and some enlarged glands were present in the axilla, which on microscopical examination were shown to be simply inflammatory. Dr. Adam H. Wright referred her for radium applications over the line of suture, ten days after operation. This treatment was repeated in one month. Whether the treatment has had any effect, we will probably never be able to tell, either one way or the other, as of course surgical treatment alone is very often effectual in these cases.

The other two cases were sarcomata. One was in a male infant, in which a round-celled sarcoma had developed at the side of the anus. It was removed by Dr. Wallace Scott, of Toronto, but reappeared in two weeks. Dr. Scott operated again, and before the sutures were out, referred him for radium treatment.

Very thorough radiation was carried out and has been repeated at intervals since, with the result that there has been no recurrence during four months, although all who saw the case regarded it as one in which recurrence would probably occur, and gave a very grave prognosis.

The other occurred in a man of 61, who was referred by Dr. Kidd, of Ottawa, on the suggestion of Dr. Wickham, of Paris. He had had a spindle-celled sarcoma of the tissues on the right side of the neck, which had been removed first in Ottawa, in May, 1908, and, owing to a recurrence, again in May, 1910. It soon recurred, however, and a very extensive dissection was done in London, England, in August, 1910. Six days after the operation he went to Paris, where radium applications were made by Dr. Wickham for a period extending over three weeks. As a prophylactic measure, he was advised to have this treatment repeated at intervals, and in Toronto in October, 1910, was given another thorough radiation over the field of operation, and particularly at points where the scar tissue was in excess. By this method we believe any sarcoma cells can at least be held in check, if not actually destroyed.

From the experience we have had with this agent during the past few months abundant opportunity has been given to verify the results obtained by others in its therapeutic use.

Judging from results already obtained, we feel that radium therapy is only in its infancy, and that the future will disclose other pathological conditions in which it can be of great service.

134 Bloor St. West.

TUBERCULOSIS OF THE OPTIC NERVE

BY COLIN CAMPBELL, M.D., TORONTO.

Tuberculosis of the optic nerve is sufficiently rare to arouse interest, as the literature is scant. Fuchs merely states that a few cases of tuberculous granulation tumor of the nerve have been reported. Parsons says that miliary tubercles in the sheath and septa are not uncommon, and quotes from Michel and Kabsch cases of tubercular meningitis, in which the nerve sheath and septa have been found studded with tubercles, and the vaginal space filled with inflammatory tissue. The nerve may be attacked by direct extension from the eye, or choroidal tubercle. Sattler, in 1878, reported a case of extension from the brain, in which the nerve was transformed into a mass of granulation tissue, caseated at its centre. Papilla and retina also contained tubercles.

The patient, whose case I am presenting to you to-night, was a gentleman in our profession, and some of you have examined him.

He came to see me Sept. 26th, 1909, with the astounding statement that he believed he had thrombosis of a retinal vein in his left eye, based on the fact that it had, during the previous two or three weeks, been red once or twice, and he had noted the vision at times indistinct when using the ophthalmoscope.

Externally, the eye showed nothing abnormal. Movements were full, tension normal, and media clear.

The lower nasal vessels were hidden in exudate, the veins distended and tortuous. There were large retinal hæmorrhages in this quadrant. Only the outer margin of the disc could be defined, and the lower quadrant was swollen. The macula showed a few indistinct white dots. The rest of the fundus was normal. The R. fundus was normal.

He was thirty-four years of age, married, and had two healthy children. He had had rheumatism off and on for six months the previous year, and had lost twenty pounds. He had not had syphilis. There was no pus focus about the nose, mouth, throat, or elsewhere in the body. He had some dyspnœa, thought to be due to a heart lesion.

I did not see him again until his return to the city November 6th. Dyspnœa was then painful, and he looked very pasty.

*Read before the Section of Ophthalmology and Oto-Laryngology, Academy of Medicine, Toronto, Nov. 17, 1910.

Headache, which began with a cold in the head, had been pretty constant for six weeks, but less for three days. There had been purulent nasal discharge from the anterior group of both sides, but this had ceased, and the nose showed nothing abnormal. He had been having fever for "some time"—evenings 100.3-100.4°, mornings always 99.4-100°.

Clinical examination in Minneapolis a week before found no heart lesion; blood pressure, 120 only; blood and hæmoglobin normal. The urine, in seven examinations, showed only once a trace of albumen; no sugar, no casts, no tubercle bacilli, and no pus. S.G., 1018—20. 70 oz. in twenty-four hours.

His R.E. vision was 6/6, field full, central color vision normal. The R. fundus was practically normal, the disc margins possibly not quite sharp, the macula clear, vessels and periphery natural.

L.E. vision was only 6/18, the field cut off above, especially the nasal quadrant, to near fixation point. It was color blind. The fundus showed the picture as of a typical albuminuric retinitis. The disc margins were blurred and slightly swollen; the macula showed a fan of white exudate, with rays upward. The lower part was obscured by œdema of the retina, and lower still by hæmorrhages, many small and one large, on the lower temporal vessels. The lower nasal veins were less swollen.

On December 6th—one month later, during which time he was confined to bed under the care of Dr. W. H. B. Aikins, associated with Dr. H. B. Anderson—he still held weight and color. Pain in the head continued distressing. For the most part it was a dull, heavy pain, or even a mere stupid feeling, with occasional shooting pains, sometimes in one, sometimes in the other side of the head. The pain would frequently cease for several hours, or even a few days at a time. He ate and slept pretty well. While drowsy at times, he was usually alert, and took an intelligent interest in his case up to the end.

Dyspnœa and tachycardia on exertion added to his discomfort.

Respirations did not rise above 22 until just before the end. Urine and blood were still normal. Two cultures taken from the blood by Drs. Mann and Mabee were sterile; a third showed staphylococcus albus.

Temperature rose to 100 nightly, and rarely touched normal. The R. fundus was unchanged, the L. macular fan and disc as before, but the hæmorrhages had for the most part been absorbed, and the veins were less swollen. L. vision had improved to 6 9.

On December 27th his general condition had changed little, and the vision of the left eye was apparently still good.

On January 24th the R. fundus showed no gross changes, and the L. eye was little worse.

On February 28th the L. fundus was obscured by exudate in the vitreous, and vision was reduced to light perception. The R. disc margins were less sharp above and below, and the macula greyish, but showed no spots. Vision seemed clear.

He had had a sudden attack of vertigo, and a feeling as if something had given way in his head a few days before. Some œdema of the L. upper eyelid had appeared next day, and remained a day or two. The eye had since been worse, but the pain in the head better.

On March 7th the R. disc margins were fluffy. Dr. Goldsmith examined the nose, transilluminating the sinuses, and found no disease.

Owing to illness, I was unable to see him again, or to be present at the post-mortem; but through the kindness of the gentlemen herein mentioned I am able to furnish the following data:

Von Pirquet's test for tubercle, applied by Dr. Aikins on March 17th, was negative.

Vomiting was infrequent until March 24th, when severe hiccough set in and continued one week.

At the same time polyuria suddenly developed, amounting before death to 288 oz. in twenty-four hours, and at times smoky with blood.

Restlessness and some delirium alternated with periods of mental clearness up to the end.

Lumbar puncture, April 4th, was unsuccessful.

On April 3rd he developed cough and rapid breathing, and died April 9th, 1910.

A post-mortem was performed by Drs. O'Reilly and Mann, Drs. H. B. Anderson and W. H. B. Aikins present.

There was found a typical tubercular basal meningitis, with fine miliary tubercles over the whole base, and extending into the Sylvian fissures and about the pons. None on the hemispheres. The R. optic nerve was swollen to more than twice its normal size. The outer part was light brownish and gelatinous as far back as the chiasm. The L. optic nerve and the tracts were merely studded with tubercles. The dura was smooth, and the cavernous sinuses were not thrombosed.

On sections of the R. optic nerve, the outer half crescentic

in area, was brownish and gelatinous, the inner half looked like normal nerve. There were no gross lesions in the brain, and no excess of fluid. The cord was not examined. Unfortunately the orbits were not opened.

There were numerous fine gelatinous miliary tubercles under the pericardium, extensive adhesions in the R. pleura, and large elastic glands retrosternal and at the root of the R. lung. The lungs were macroscopically healthy, but several tubercle bodies, with typical formation and giant cells and central caseation, were found by the microscope in the R. apex.

I am indebted to Dr. R. W. Mann, pathologist to St. Michael's Hospital, for the excellent sections shown of both optic nerves.

The outer half of the R. nerve is replaced by a gelatinous brownish material, made up of round and epithelioid cells, with giant cells and some degenerated or necrosed areas. The inner half shows very little round-cell infiltration. The nerve bundles are little altered, but there is a large island of tuberculous tissue near the middle of the healthy part of the nerve.

The L. nerve shows considerable general round-cell infiltration. A few bundles near the sheath at one edge are apparently transformed into tubercular granulation tissue, with typical giant cells near the centre of each bundle. The rest of the nerve shows a few aggregations of nuclei—possibly giant cells—in the septa, but no typical tubercle formations.

The L. pial sheath is normal, but for one spot.

Parsons considers transmission by the lymph stream the most common mode of infection, so that the sheath suffers most, the dura being least vulnerable. This would appear to have begun in the pial sheath, and to have extended along the vessels of the septa. The chief interest lies in the involvement of vision, with unilateral neuro retinitis so early. There were no tubercles visible in the choroid, so that the eye was secondarily involved.

The visible thrombo phlebitis of the lower retinal veins, and subsequent picture, bears out Haab, that the stellate figure at the macula is a general expression of intense disease of the vessels and interference with the retinal circulation. Probably the orbital portion of the nerve would have explained why the L. vessels only were involved, and possibly have shown the primary focus. It is to be regretted that in such cases the usual reactions for tuberculosis are valueless.

93 Bloor Street West.

THE MEDICAL MAN AS A WITNESS*

THE HONOURABLE MR. JUSTICE WILLIAM RENWICK RIDDELL,
King's Bench Division, High Court of Justice for Ontario.

Man is a social animal; and so soon as in the course of evolution he became such, it was imperative that his conduct should be governed by rule of some kind—in short, by law. Obedience to law must needs be considered right: disobedience, wrong, a sin—for wrong and sin were at first all one, “when wild in woods the noble savage ran,” as the poet says with unconscious irony.

If a man conceived his rights to have been trenched upon, only two courses might be open. If the force of public opinion (and no civilized man can wholly appreciate the tremendous power of public opinion in a primitive community) should not prove effective to restore him to his rights or to bring about adequate compensation, he might be obliged to avenge his wrongs if he could by his own strong right hand.

The other method is the submission of the determination and enforcement of rights to some tribunal—and that tribunal under whatever name it may be known, is in substance a court.

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Evidence is (1) documentary; or (2) by witnesses. I need not speak of the former, but pass at once to evidence given by witnesses.

There are two classes of witnesses—the ordinary witness and the skilled or expert witness. The former is allowed to speak only of facts within his knowledge: being sometimes allowed to refresh his memory by the use of a written memorandum or entry in a book. He may not express his own belief or opinion except on some particular subjects where positive and direct testimony may be unattainable, as for example, the identity of persons and things, the genuineness of disputed writing, whether two persons are attached to each other, and the like.

Where, however, on questions of science, art or trade, persons skilled in the particular branch of science, art or trade are called upon not only to testify to facts, but also to give their opinions, they are called skilled witnesses, or more commonly “expert witnesses.” So far as their evidence is as to the existence or non-existence of facts which can be conclusively established or demonstrated, it is not generally called expert evidence—that name being given to the opinions expressed by them as

* Abstracted from an address before the Section of Medicine, Academy of Medicine. Toronto, Nov. 8, 1910.

distinguished from the facts upon which such opinions may be based. Indeed it is by no means uncommon for an expert witness to sit in court and hear the evidence given by others as to facts, and then give his opinion upon the facts so evidenced.

The old jibe, that "there are three kinds of liar—the liar, the d—d liar and the expert witness," had its origin and derives its vogue from this kind of expert evidence, *i.e.*, opinion evidence. And it must be conceded that most of its popularity is due to the performances of medical witnesses.

It is not wholly unjust. There is—there can be—no doubt that the extraordinary antics of some called as medical experts are in many cases a disgrace to the medical profession—and that it is hard to reconcile their conduct with any other theory than that they are in the category of superlative liars—that they are worse than even "adjective" liars.

But too much should not be made of mere differences of opinion. "Doctors differ"; but it is not Doctors of Medicine alone—Doctors of Law are quite as irreconcilable in their views; while I presume it would be hard to find two Doctors of Divinity who agreed on all points. And Doctors of Medicine have much more reason—"excuse" is not the right word here—than these or those.

* * * * *

It is the first duty of a witness to tell the truth—the oath is "The evidence you shall give . . . shall be the truth, the whole truth and nothing but the truth." The words of the oath are not to be taken quite in the ordinary sense. When an accused person pleads "Not guilty," this is not in law a denial of the fact that he has committed the offence charged against him; but it is only a statement to the effect, "I do not admit that I committed the offence charged: prove that I did, if you can"—so the witness is not supposed when he takes the oath to be undertaking to say all he knows—the oath paraphrased would read thus: "What you shall say in answer to the questions put shall be true and, being true, shall neither be a concealment of anything else that is true nor a suggestion of anything else that is false." To use the accepted legal terminology—the answer shall not only be true so far as it goes, but it shall contain no *suppressio veri* and no *suggestio falsi*. For example, in a case in which an unmarried woman is suing for damages for a leg broken through the negligence of a railway company, her doctor when asked, "How did you find the plaintiff after the accident?" should not as a rule say "I found her with a broken leg and enceinte." If he left out the latter fact he would indeed not be telling "the whole truth"

in the popular sense of the words, but he would in most instances be doing so in the legal sense. If, however, (for instance) the damages claimed were based in part upon her being forced to remain for a long time in her room and the condition of pregnancy contributed to this, the witness would be guilty of a *suppressio veri* were he to omit to disclose the fact. So, if the witness is asked, "After your examination of this girl, are you prepared to swear that she was not with child?" and he were to answer, "Well, I am *not* prepared to *swear* that," and say nothing more, he might be guilty of a gross *suggestio falsi*—he would be, if he had carefully examined her without any thought of anything of the kind, and without suspicion having been aroused, if he did not add, "but I have no reason for thinking she was," or something of the kind.

But telling the truth is not the only duty of a witness. He owes it to himself and to the truth itself not only to tell the truth, but to make the truth tell—*i.e.*, to make his evidence effective. Now by this I do not mean that a witness should take sides—the eager, the partial, witness is too often dishonest and is always discounted; and nothing is more nauseating than to see and hear a witness stretching the facts, and in the ardor of his partizanship narrowly, if at all, escaping perjury. What I mean is, telling the truth in a manner as persuasive as possible, and as likely as possible to induce belief.

Speaking in general terms, the witness is called upon only to answer questions.

I on another occasion laid down three rules which it would be wise for witnesses to observe; and I now repeat them:

First, "Understand thoroughly the question put, before attempting to answer it." If you do not thoroughly understand a question, have it repeated, interpreted or explained until you do. If the lawyer refuses to repeat or explain, appeal to the judge—you have your rights, and he will see to it that you are given them. If the question is ambiguous, you have the right to have the ambiguity removed. Do not, however, be hypercritical—do not dishonestly pretend not to understand a plain question because it chances to be an awkward one—nothing more prejudicially affects the value of a witness' testimony than an obvious desire to fence or to spar for time. Apply your mind honestly to the matter of the question and honestly endeavor to understand it—if the question is in reality unambiguous, do not dishonestly pretend to think it is ambiguous.

Again, "Having thoroughly understood what is asked, answer it as briefly and concisely as you can, consistently with the

truth without suppression of the true or suggestion of the false." If the question can be answered "yes" or "no" without some implication which is untrue, some *suppressio veri* or *suggestio falsi*, answer it "yes" or "no"; if it cannot, do not hesitate to say so. Say that an answer "yes" or "no" would convey a wrong impression; and refuse, however much pressed, to answer in a way which carries an implication of untruth. Do not heed the demand, so often made with an air of righteous indignation, for a plain answer to a plain question. It is a common thing for lawyers to insist that any leading question can be answered "yes" or "no" without any suggestion of the untrue: but try this one—"Have you quit beating your wife yet?" Many a witness has yielded to importunity and answered "yes" or "no," when in his soul he knew he should not—this is morally if not legally equivalent to perjury. But again do not be hypercritical—you will in many cases be told to answer "yes" or "no," and you will have an opportunity of explaining and amplifying later. Insist upon the opportunity, in justice to yourself and to the truth.

Remember, however, that it is the question put to you that you are to answer, not something else. Doctors are very prone to sin in this regard—called upon to testify as to facts, they indulge in opinion—asked to give an opinion of something rightly within their competence, they give an opinion upon something which is not. Time and again, I have heard doctors in cases in which insanity is set up, not remaining content with giving an opinion as to sanity in the legal sense, go on and say that the prisoner in their view should not be punished, but should be treated for the disease. That is not for the doctor, or, indeed, for the judge either—it is for Parliament and the Executive.

Third, "When you have answered the question, SHUT UP." No witness is so dangerous to his own side or so much the prey of counsel on the other as the talkative witness—the heart of counsel leaps with joy when he sees his learned brother on the other side trying in the examination-in-chief to stem the flood of talk from a loquacious witness. It has been my own experience that no small proportion of cases are won and lost by some witness talking too much.

Now these seem rules simple to the verge of silliness—or over the verge; but if they were observed, I am confident that the time occupied by trials would be diminished by one-third or more. Go into a court of justice and you will see witnesses failing or refusing to understand what they are asked—answering something entirely different, and talking at random long after they should have been silent.

As part of the duty to make the truth tell, the witness ought not to disregard any legitimate means of impressing the trial tribunal. For this, as well as for other reasons, he should avoid jesting and frivolity—the matter that is going on is a serious one: and there is seldom room for humor and more seldom still for wit. Few, if any, judges appreciate any wit or humor but their own; and judicial wit and humor are well known to be the lowest species of either. It is rare, too, that a jury does not form a poor opinion of the joking witness.

It is said that the English-speaking people of this continent are becoming a race of jesters—and there is much truth in the charge. “ ’Tis true, ’tis pity; and pity ’tis ’tis true.” Still the line is to be drawn when an oath is taken. If there were no other reason, there is at least this—it is seldom that wit or humor can be successful without exaggeration of fact or the use of words in a metaphorical or unusual sense—either should be absolutely tabooed in the witness-box. The medical man should not complain that he is not permitted to display his wit—the law is and should be no respecter of persons, and if one man may joke, so may another, and our courts degenerate into a raree show instead of remaining a temple of justice. There is nothing which impresses a jury or a judge more than the quiet dignity of a self-respecting man—respecting himself, he is willing to respect others and he inspires respect in others. No counsel, however bumptious, can make headway against such a witness. Lord Mansfield says, “Ingenuity is one thing and simple testimony another, and plain truth needs no flowers of speech.”

Nor should a witness think or pretend to think that his answers are for the information of counsel—questions which require no answer to men of education, as both lawyers and doctors are expected to be, may need to be fully answered for a common jury to understand the matter. A question is never asked—or seldom—that counsel may understand, but either for the information of the trial tribunal or to test the witness himself. In either case a straightforward, plain answer has the best effect: and nothing is gained by indignation at an apparently unnecessary question or by omitting to answer. “You must answer any questions that are not ensnaring questions.”

The language in which an answer is framed is not without importance. I do not know that we are any more given to slang than other peoples—I find as much in London and New York, in Montreal and St. Louis as in Toronto—perhaps more. But there can, it seems to me, be not much doubt that this age uses more slang than any preceding one. Slang is said to be language in

the making; and, of course, much that was slang has now become good English—but in a court of justice there is no more need of using language which is in the process of manufacture than in using customs which are in the same condition and have not yet crystallized into law. One very serious objection is that until the words have become old and thoroughly incorporated in the language, one person uses or may use them in one sense, another in another. Ambiguity is always a curse, and not less so in evidence than in aught else. I am not sure, either, that the slangy doctor impresses a jury any more favorably than the jester.

There is, however, another fault into which the medical man is prone to fall—I mean the use of highly technical language. Of course medicine, like every other art and science, has its own terminology, which it is wholly natural for its professors and practitioners to use. But much of it is “caviare to the general”—whether it be of Latin origin or not, it is Greek to a jury. Much may need to be couched in technical language for reasons of delicacy, or accuracy or the like: but “bruise” is just as good as “contusion,” “bleeding” as “hemorrhage,” “broken arm” as “fractured humerus.” Wherever an accurate impression can be conveyed by the use of common language, common language should be used—where technical nomenclature can alone give the right idea, do not hesitate to employ it.

And remember always that you are not giving a lecture upon the subject or explaining matters to professional brethren—you are stating facts to be comprehended by the laity. If you do not make the trial tribunal understand you, of what avail is all your knowledge and learning?

The appearance of a witness is not without its importance—neatness of dress, cleanliness of person, are not less pleasing in the witness-box than elsewhere. There is a philosophy of clothes, and Shakespeare knew it:

“Costly thy habit as thy purse can buy,
But not expressed in fancy: rich not gaudy;
For the apparel oft proclaims the man.”

Neither fop nor sloven can impress a jury like one dressed as a gentleman—though he may have all the learning in the world, he is handicapped by his outside.

To do justice to himself, the witness should not omit to consider his physical condition. A doctor is supposed to be always in perfect condition, but there may be exceptions—I think I remember having seen some—in any case, the strain of a pro-

longed and strenuous cross-examination will test the strongest witness, especially if his nerves are a little on edge. A surgeon who expects to perform a critical operation will generally avoid stimulants or other "disorganizers." Does he follow the same rule when he is about to go through an ordeal as trying in some respects—in which, as in the operation, a slip may cost a life, or, if not, may at least prejudice a future?

The witness should prepare himself by reference to any notes or memoranda he may have made, by reflection on what took place, by examination of authorities to back any opinion he may have formed. Do not despise the counsel who is to cross-examine you: he may not know much about your science generally: but for the particular case he should, and if he has done his whole duty he does, know as much as you, and perhaps more. To the counsel who examines in chief be clear and accurate; but to the cross-examiner, as you value your peace of mind, be, if possible, even more so—do not fight with him, that is his business, and you cannot hurt him, though he may hurt you—be courteous and firm—don't hedge—do not make a pretence of omniscience—if you do not know a thing, do not hesitate to say so—no one will think the worse of you—be quiet, cool and dignified, and you are safe. Of course the lawyer will be irritating and will try to make you lose your temper or your self-control, but that is part of his policy—do not let that affect you. Do not joke with him even if he try to joke with you—it is not his desire to show himself friendly to you that influences him—he is after your scalp—if he can make you "play the fool with mirth and laughter," it is likely he will get something from you that you should not give. If you reply in slang or ambiguous language, he will be apt to use the words in a different sense from that in which you used them. If you give a plain, serious answer in good English, he can make no more of it than he in justice should.

There are many complaints about cross-examination and some may be deserved; the privileges of cross-examining counsel have sometimes been abused, as every other right may be abused.

But let us see what cross-examination really is. It is not as so many, even some lawyers, seem to think, "examining crossly." Cross-examination is the art of searching by questions into the mind of a witness in order that the trial tribunal may see, first, what the witness really means, and, second, how far what he says, may be relied upon.

There are many things to be taken into consideration in determining how far a witness can be relied upon. It must be plain that it would not do to allow him to state in his own way what

he desired to say and then let him go. He might forget important parts of the story, he might load it with irrelevant detail, he might speak loosely where exactness was imperatively required, he might express opinions where he was called upon to state facts, he might guess or imagine where he should know or say he knew where he only fancied, he might state as fact what he had only heard—all these dangers and many more are ever to be guarded against.

Nor would it do to allow the story to be told under the guidance of counsel for the side for which the witness was called, with nothing more. No one who hears a witness tell his story under the hands of a skilful direct examiner (and direct examination is to my mind a more difficult art than cross-examination, and it is rarer to find a first-class direct examiner than a cross-examiner who deserves the same praise), but must be struck by the beauty and symmetry of the structure built up, and almost grieve to see it fall in pieces before counsel on the other side. Some way of testing the accuracy of evidence must be provided—and no means yet discovered can compare for a moment with cross-examination. No doubt injustice will sometimes result both to the witness and to the side for whom he is called, but in the vast majority of cases the evidence of the honest witness is not weakened, but it is strengthened by a rigorous and searching cross-examination—while the evidence of dishonest or incompetent witnesses is in numberless cases weakened or destroyed. "None but the sore feel the probe."

Nor is it only the dishonest witness whose evidence needs probing. The value of the evidence of a witness may and often does depend on much more than his honesty. There is first to be considered the witness' opportunity of knowing the facts. He may have been in the immediate presence of the actors or a distance away; he may have made a careful or a merely cursory observation or examination; it may have been clear daylight or the gloom of night—and many other circumstances may have to be considered in this view.

Then his capacity of understanding what he did observe—see or hear or feel—or his capacity to form an opinion of any value. His general intelligence, his education, his training, are all of importance in this enquiry.

Again, in observing fact or forming opinion, is he consciously or unconsciously swayed or influenced by social or moral, religious, political or racial prepossession or prejudice? The common impression amongst sellers of liquor is that no strong temperance man or prohibitionist can, in cases of alleged illegal sale of

intoxicants, see things as they really are. I do not say that this is true, but it will illustrate my meaning.

Has the witness any pecuniary interest, or interest of any kind, direct or indirect?

Then what kind of memory has he? Does he in fact remember what he says he remembers? Has he the reproductive and representative faculties of the mind so well developed and in such good condition that he can call to mind what did actually happen? Or is he only indulging in fancy and imagination?

And is he really expressing his thoughts by the language he is employing? It may seem an extraordinary statement to make, but it is undoubtedly true that not one man in twenty appreciates the value of an accurate use of language, and not one man in twenty can express precisely what he means so as to exclude the possibility of mistake.

Most important of all is honesty. I am glad to say that as a general rule medical witnesses are honest. Any witness who will give evidence contrary to the fact as he understands it or contrary to his real opinion, either to help a plaintiff to obtain a verdict when he should not, or a larger verdict than he should or to help a defendant to escape the legitimate consequences of wrongdoing is a thief; he is a criminal and should just as truly be behind the bars as the man who opens the vaults of a bank with dynamite. Expert witnesses will sometimes give testimony which is certainly a tissue of lies—no doubt were they prosecuted for perjury, they would shelter themselves behind the plea that they were giving an opinion only and not swearing to a fact—thus ignoring the truth that the existence or non-existence of an opinion is itself a fact. Perhaps the most striking and most shocking examples of this are in criminal cases where the defence of insanity is set up—the mention of such cases gives me a bad taste in the mouth, and I say no more.

And just here let me refer to something which is not uncommon—I mean exaggeration—which is a form of lying. If you do not believe it, read "Opie on Lying." Many witnesses appear to think that the trial tribunal will probably strike an average of the professional opinions given—they consequently exaggerate their own so that it may have the greater weight.

Some, too, do not seem to place any value on language, and while there is in their terminology a distinction between "yes" and "no," words of a less definite and fixed value are not distinguished. There is a difference between black and white, but dark-grey is with them one or the other, depending sometimes, and too often, upon the side which calls them.

Sometimes there is apparently an attempt to take advantage of the supposed ignorance of judge or jury. For example, I have heard a medical man (who should be an expert) solemnly swear that anyone who believed in the possibility of communication with the spirit world was necessarily insane and incapable of managing his affairs. It was useless to refer him to intellectual giants from Socrates to Sir William Crookes and Sir Oliver Lodge or to business men like Stead—he stubbornly held to his opinion—or what he said was his opinion.

Such evidence as this is wholly harmful and improper—to use no stronger words.

Now, cross-examination is directed to the sifting of the evidence given so as to find (as has been already said) what the witness really means and how far what he says and means may be relied upon. Medical men should not complain that they are subjected to the same treatment as other witnesses. There are numberless cases in which not only straight perjury, but also concealment of the truth and false suggestions have been made plain by cross-examination, and cases are not unknown in which medical men of apparently the highest standing are shown to have permitted themselves to express opinions wholly opposed to the well-recognized facts of their profession—opinions which no competent medical man could possibly entertain.

And as the court is either conducting what should be a stern and careful investigation into an alleged offence against the people or is engaged in a civil case in what is the civilized substitute for a physical and personal combat between the contestants, and as each counsel is upon honor to do all he legitimately can for his client, no witness can ask that cross-examination shall be but trivial and not a trying ordeal. Lord Bramwell said, “It is well for the sake of truth that there should be a wholesome dread of cross-examination.” I agree with him: this dread of cross-examination must undoubtedly tend to greater care in the giving of evidence on the direct examination: and tend in general to make such evidence of greater value.

In much of what I have said, I have not distinguished between the doctor as an ordinary and as an expert witness. There is, however, one consideration in the latter case which perhaps deserves a word. The scandalous exhibitions of irreconcilable differences of expert opinion have called forth many comments: and it has been suggested that some remedy may be found. For example, I copy the following from a thoughtful article in a daily newspaper:

"EXPERT TESTIMONY."

"There is some danger that the medical profession will be discredited by the competition for expert witnesses in damage suits and criminal cases before the courts. In some instances the witnesses seem to become advocates for one side or the other, and the conflict of opinion does not tend to confidence either in the courts or in the profession. Is it impossible to have a physician or a board of physicians of high standing appointed by the Crown or retained as Crown counsel are retained in criminal cases? If this is practicable (and there may be many objections which we have not considered), the evidence of such experts would be available alike for prosecution and defence. Judges and juries would have reports in which they could repose a greater degree of confidence, and in many cases perhaps a sounder administration of justice would be assured."

In certain criminal cases this is now the practice in Ontario. Wherever a crime is thought to have been committed and the accused is in custody—if there be any room to suspect his sanity, or if it be suggested that his defence may be insanity, two experienced alienists in the employ of the Ontario Government are sent to examine and report—these are not advocates, and their whole duty is to determine the exact fact. They are at the disposal of the defence, as well as of the prosecution, and in my experience they have been sometimes called for the defence. So, too, in cases of suspected poisoning, there is an analysis made at the instance of the Crown. No one has ever challenged the absolute honesty and fairness of the present analyst—his evidence is at the disposal of the defence, in the same way as that of the alienist.

But even in these cases, neither party is bound to accept as conclusive the evidence offered by these experts. Others may be, and often are, called; and I should consider it a most dangerous practice to hold any person bound by the opinion of any expert, however able and honest. In matters of insanity, *e.g.*, men of equal ability, skill, experience and honesty may and often do entertain different opinions—while even in matters of chemical science, it should not be forgotten that a most careful, conscientious and capable chemist was forced to admit that arsenic he found upon his analysis came from his own reagents. Science is constantly advancing: and it may well happen in the future as it has happened in the past that the official expert falls behind the younger and non-official enquirer. Even in matters of law, the people are not, and should not be, satisfied with one expert—a trial Judge finds his opinion appealed against to a

Divisional Court—the judgment of that Court is reviewed by the Court of Appeal; and it may be, the Supreme Court of Canada and the Judicial Committee of the Privy Council are ultimately required to determine what is the law. Law, too, as we have seen, is a science in which the theory is that somewhere in the books, if diligently sought for, will be found a decision or a principle which will conclude the case under consideration. How much more then should a litigant or an accused be at liberty to contest the opinion of an expert in a science which is living and ever growing—in which discoveries are being made yearly—I had almost said daily and hourly?

It must be, then, that other than the official experts may be called: and this should, as it seems to me, be fatal to any idea of an official, individual or collective, being appointed as a standing referee upon scientific questions. In all but the exceptional cases mentioned, each party must under our practice procure his own experts: and while it cannot be said to be wholly satisfactory, I have not yet seen any scheme proposed which is at all feasible.

But we do not expect any human institution to be without faults; and Courts are human. The Judge may never have known or may have forgotten some principle of law—an old Judge said: “God forbid that an attorney or even a Judge shall be considered to know all the law.” The jury may be swayed by sympathy or prejudice, or may be unintelligent or misled, and may perversely find a verdict not according to the evidence: and it is too much to expect that any method of giving any kind of evidence, expert or otherwise, will be perfect. “No system of judicature can be devised or suggested in which occasionally failure to insure complete justice may not arise.”

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Courts exist not for the witness any more than for the lawyer or judge, but for the litigant—and it is the interest of the litigant alone which is to be considered—his interest is the interest of the people who pay for the courts.

Medical men must face the situation—so good a friend of the profession as I, may be pardoned a little plain speaking. A great deal of the odium attaching to the expert medical testimony is due to natural difference of opinion and is consequently unjust: most of it is not. For the most part it is due to medical men themselves, and the remedy (so far as any remedy is possible) is in the hands of the medical men also. The trouble in the main arises from two causes. First, downright ignorance. The very high standard of professional attainment reached by

the practitioners of medicine in our Province is well known, and I am proud of it, as everyone should be: but it must be admitted that there are exceptions. Some there are who cease to be students the day they pass the Council; some who during their course in college are satisfied with the minimum required to pass the examinations. They are, and they remain ignorant. Again, and it pains one who respects and esteems the medical profession as I do, to say it—there is often absolute dishonesty in the medical as in every other kind of expert. Your president had been drinking of the waters of sweetness when he said, “For doctors to enter a witness box and testify to one opinion for a fee, whilst others swear to an opposite opinion for a larger fee is not in the best interests of the profession, and is hard to reconcile with the best interests in the cause of justice” (unless, indeed, Dr. Macdonald was speaking of honest and well-considered differences of opinion). If these “opinions” were dishonest, the doctors were perjurers—if formed without careful consideration, they were pretenders—in either case a disgrace to the profession. If the opinions were honest and well-considered, how determine which was right? And how remedy the difficulty? By leaving it to another expert equally fallible?

Let medical witnesses be masters, as they should be, of their science, and practice plain, simple honesty; and most of the scandal will disappear.

But as I have already said, difference of opinion must be expected. Medicine is not mathematics, not an exact science—and it is not and never can be a matter in which authority is supreme.

There is no prospect of medicine becoming anything like an exact science until—and unless—experiment be permissible upon the human frame. This cannot be done now—the doctor treats, he does not experiment, he is in duty bound to do the very best for that particular patient, not for medical science generally.

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I have entirely failed in one chief object of my address to-night if I have not made clear that the members of the medical profession must take hold of this matter of expert evidence themselves.

The Judges cannot help you, they are bound by precedent: the lawyers will not, they have their account in the disagreement of experts; the legislature cannot be expected to give medical men as witnesses a position different from or superior to that of any other class of the community.

Now, while there are, of course, black sheep in the medical

as in every other profession, their number is not great; and with the exception of these few, I am confident an enlightened regard for truth, for the good of the public and of the profession, must be all-powerful. Even the black sheep have some regard for their general repute among their brethren. If they knew that a doctor who gave a dishonest opinion would be shunned and scorned like any other perjurer even their conduct would be more nearly honest.

There is no reason why medical experts should not stand at the very head of all expert witnesses, as they ought, instead of being, as they are, at the very foot. And I am not entirely without hope that the day is not far distant when such will be the case. If anything I have said will help, in however small a degree, to speed that day, I shall feel amply repaid.

Selected Articles

THE DIAGNOSIS OF INCIPIENT PULMONARY TUBERCULOSIS

BY HENRY HUBBARD PELTON, A.M., M.D., NEW YORK.

Adjun Assistant Attending Physician to Bellevue Hospital; Chief of the Medical Clinic, Presbyterian Hospital, Out-Patient Department.

Of the problems which confront the physician to-day none is more important and interesting than the diagnosis of incipient pulmonary tuberculosis. The chances for recovery of a tuberculous patient are in most instances, if not in all, in direct ratio to the earliness of the discovery of his disease; this fact alone should be a sufficient argument in favor of the employment of every means toward the detection of the affection in its earliest form. The importance, again, of diagnosis in the first stages of infection cannot be overrated from the point of view of social economy; it is costing the municipality and the State thousands of dollars yearly to care for subjects in the advanced stages of the disease, who, had their affection been diagnosed in its incipency, might be supporting themselves.

A discussion of the economic aspect of the question is outside the scope of this paper, but a consideration of the number of tuberculosis patients in our hospitals and other institutions whose support is derived wholly or in part from the public funds or from private charity is appalling; likewise the number of families which, because their older members are unable to exercise their earning power on account of tuberculous disease, receive aid from the community is no small one.

For the early diagnosis of pulmonary tuberculosis no unusual training is required; it is wholly within the attainment of the general practitioner who will use his powers to their full. And it is fortunate that this is so for most of the patients to whom this diagnosis is pregnant with importance apply, first, at least, to the class of physician who has come to be termed the "family doctor." There are, now and then, naturally enough, cases which present unusual difficulties, but these are few among many. In the diagnosis of incipient pulmonary tuberculosis, as in that of any other disease, best results will follow a certain routine procedure. Each step in this procedure is of importance and particularly do I wish to emphasize this fact, for the

diagnosis of tuberculosis in its early incipency often cannot be assured until the results of these steps are reviewed and summed up.

1. The History of the Patient.—This should be taken in full and with care; no detail of importance should be neglected. Heredity, to my mind, plays a much less important rôle in the causation of the disease than the fact that the patient may have had intimate association with tuberculous individuals. Such association may have taken place at home or elsewhere, the work-room, for instances. Trades of themselves seem to have no special etiological significance, but in the nature of things the affection is much more likely to attack those who work in crowded, ill-ventilated, and unsanitary quarters than those who are employed under the opposite conditions or in the open air.

The previous history of the patient with regard to former illnesses may teem with helpful facts; for instance, histories of influenza, pleurisy, pneumonia, and even of digestive troubles are often strongly suggestive of tuberculous lung disease. Surgical conditions, such as hip and spinal disease, cervical adenitis and anal fistula point distinctly toward tuberculous infection.

In eliciting the history of the patient's present illness the polymorphous character of the symptoms cited should not in any way be allowed to allay the suspicion of tuberculosis if there is the least reason for such; in fact by far the safest stand for the physician to take is to judge the patient guilty of tuberculous infection until, by every means at the examiner's command, he has been proven innocent of the disease.

Miller gives the following as the more usual initial symptoms: (1) Catarrhal or influenzal manifestations in which the cough is the chief symptom. (2) Symptoms suggestive of malaria in which general malaise, loss of appetite, slight evening rise of temperature, and mild digestive disturbances appear gradually, with or without cough. (3) Hæmoptysis. This should always be held to be of tuberculous origin unless other distinct cause can be shown. (4) Gastric disturbances which obscure other symptoms of more definite character. (5) Anæmia, without apparent cause. This symptom should not be allowed to deceive the diagnostitian in young girls in whom chlorosis is so frequent. (6) Pleurisy with effusion. This should always be considered tuberculous until the contrary is proven. (7) Pain in the chest. This is a not infrequent initial symptom. It is usually dull and aching in character and often is referred to the shoulderblade. Miller holds that the combination of any two of these symptoms or

trains of symptoms should, as a rule, be sufficient evidence to establish a tentative diagnosis. Even where definite physical signs are lacking suspicion should be kept alive and the physician should be stimulated to further careful observation of the patient and to regular and frequently repeated physical examinations. In such cases the time will often come when physical signs of certain diagnostic import will be detected.

2. *Physical Examination of the Chest.*—As a preliminary, and a most essential one, the patient should be stripped to the waist and seated in a light room of which the temperature is sufficiently high for comfort; he should be taught how to breathe and to cough so that the auscultatory signs may be elicited to the best advantage. The inspection of the chest in incipient cases often offers no evidence of value. The main points on which observation should be centred are (a) the shape of the chest; (b) its symmetry; (c) its movement. One should notice whether both sides of the thorax expand synchronously, whether apices and bases show a correspondingly well-marked expansion, and whether there is abnormality of the general conformation of the chest. The supra and infraclavicular regions are often little retracted until the disease is well advanced. A low chest expansion is of little diagnostic value.

Palpation may reveal changes in vocal fremitus; localized increased fremitus may indicate beginning infiltration or consolidation.

Percussion. Slight deviations from normal pulmonary resonance may be demonstrated, particularly at the apices, but they are often of such ill-defined character as to be of little diagnostic worth when not strengthened by other evidence.

Auscultation is the means which is to be relied on as giving the most valuable diagnostic testimony. Miller states that cases in which one can, with certainty, demonstrate a lesion in the absence of abnormal auscultatory signs are very few. He considers the use of the stethoscope preferable to that of the unaided ear, for with it sounds unappreciable to the latter become plain; râles are more easily heard, and the instrument is better fitted for application to the various regions of the chest. The ear, of course, may be employed alone and aided by the stethoscope. At times the former is more acute in the detection of changes in the breath sounds. The portions of the chest over which abnormal physical signs are more likely to be demonstrated in early infections are: the supraclavicular fossæ; the first intercostal spaces, particularly at their inner and outer extremities; the region between the scapulæ just below the fourth dorsal verte-

bræ; along the vertebral border of the scapula when the arm is thrown around and in front of the neck with the hand on the opposite shoulder, this area being over the interlobular septum; an area internal to the angle of the scapula; and, in children, the fifth and sixth spaces just external to the nipple. Miller suggests, as an aid to accurate auscultation, the use of a short, sharp cough alternating with a quickly-expelled, short, quick inspiration; this should be employed previously to any deep respiration for the measurement of expansion in order that râles of evanescent character may not fail of detection.

By this method of auscultation the following observations may be made: (1) The character of the breath sounds; (2) the presence of râles and their character; (3) the cough sound. The cough should never be omitted for, in itself, it has a character peculiarly its own; this may show the same variations as the breath sounds, and in addition it is essential for the appreciation of fine râles, which may not be audible at any other time. Also by its use we may be able to detect minute interruptions in continuity which are not true râles, but are analogous to the change in breath sounds described as granular or rude breathing. The presence of this alteration in the respiratory sound indicates an early stage of the condition which later is evidenced by the presence of true râles. Changes in voice sounds may be demonstrated by auscultation. Alteration of the whispered voice tending toward the broncho-vesicular quality is evidence of slight consolidation; this change is appreciated more accurately by this sign than by either the true voice or the breath sounds.

The toxæmia due to tuberculous infection is evidenced by an extremely important (from a diagnostic standpoint) train of symptoms, the most common of which are slight evening rise of temperature, rapidity of pulse, loss of weight, undue feeling of fatigue, increased rate of respiration, and anæmia. These symptoms are of most value to the diagnostician when they are observed for a week or more under different conditions, at different hours of the day and especially before and after exercise. An important early diagnostic sign is a varying pulse rate and temperature. The latter may not rise greatly above the normal, but its daily range is likely to be abnormally large. These symptoms and signs of toxæmia, when taken in connection with a history pointing toward tuberculous infection, are of extreme diagnostic value even when unassociated with lung changes sufficiently marked to be demonstrable by physical examination.

Sputum Examination.—In incipient pulmonary infections sputum examination is very likely to yield little diagnostic

assistance, still it is important that frequent specimens should be examined and, while a positive result assures the diagnosis, repeated negative ones are by no means conclusive. Bacilli are said to be absent from the sputum in quite 65 per cent. of all incipient cases. Recently Paterson has advocated treating the sputum with antiformin, which is a liquid composed of equal parts of liquor sodæ chlorinatæ and 15 per cent. solution of caustic soda, in the following manner: 10 c.c. of sputum are mixed with 2.5 c.c. of antiformin. The mixture is allowed to stand for twenty-four hours, when it is shaken and centrifugalized. The supernatant fluid is then drawn off and replaced with normal sodium chloride solution; this mixture is shaken and centrifugalized and the process is repeated. The sediment is then smeared and stained in the usual manner. He believes this process is a considerable aid in finding bacilli in specimens where they are few in number.

Hausmann, noting that many of his gastric cases gave evidence of beginning lesions at the apices, has examined the contents of their fasting stomachs (provided no sputum was obtainable) and in six cases within two months was able to demonstrate the presence of tubercle bacilli. This suggestion would appear worthy of further study, especially in connection with the use of antiformin, and should be particularly applicable in children from whom it is often quite impossible to get specimens of sputum.

The inoculation of guinea pigs with sputum in which bacilli are not demonstrable is of value as a diagnostic help but is rather beyond the resources of the practitioner.

The stools are said to contain the bacillus, even in beginning tuberculosis, and examinations of them may reveal its presence.

Blood Extermination.—The statement made by Rosenberger that the blood of incipient cases often contains demonstrable tubercle bacilli is uncorroborated; in fact it is now believed that his results were due to the fact that his wash water was contaminated with an acid-fast bacillus morphologically similar to the tubercle bacillus.

Cytologic Diagnosis.—Widal believes that a preponderance of lymphocytes in the blood speaks for tuberculous infection, while a majority of polynuclear leucocytes of neutrophile and eosinophile types excludes the disease, but this theory fails of general acceptance outside of France. The employment of Arneith's method of differentiation of the nuclei of the leucocytes is being found to be of some value in diagnosis, but no definite work along this line has as yet been published.

The Opsonic Index.—King states that certain observations and experiments conducted by him and Inman seem to show that opsonic index determinations may have a practical use in the diagnosis of early tuberculosis. Their complicated technique and the special knowledge necessary for their performance would seem to militate greatly against their general use. For diagnosis the relation of the temperature to the opsonic index before and after periods of exercise is observed. In tuberculous patients the temperature rises after exercise, while the opsonic index is lowered. Jacobs finds that the opsonic index rises in pulmonary tuberculosis after a period of deep breathing lasting for about a half hour. He considers that this exercise produces an autoinoculation which results in a corresponding rise in the opsonic index and regards this method of great value in early diagnosis, since by it the presence of infection can be demonstrated long before bacilli can be found in the sputum.

Agglutination Tests.—These, according to von Ruck, may be relied on, either in connection with tuberculin tests or alone, to confirm the diagnosis in most nonbacillary cases where the physical signs are suspicious. Of 300 cases tested, he found the reaction negative in 20, and in the rest positive in dilutions of from 1 to 5 to 1 to 50. Arloing and Courmont have stated that agglutination in dilutions below 1 to 5 should not be considered diagnostic, but von Ruck believes that in the absence of other definite diagnostic evidence no reliance should be placed on a dilution less than 1 to 10. When subjective symptoms and physical signs point toward infection, he is accustomed to consider a reaction in higher dilution of positive value, and that the tuberculin reactions may be dispensed with, since their results have always confirmed the serum tests in his experience.

The Tuberculin Tests.—Of these there are four, three of which have been introduced comparatively recently.

1. **The Percutaneous Test.**—This consists in the inunction of an ointment of equal parts of old tuberculin and lanolin. The site of the inunction is usually a small area of the skin over the abdomen. A positive reaction is evidenced by the appearance of a papular eruption. Bandelier and Roepke believe that this test is inferior in its certainty to the cutaneous test, which is uninfluenced by the thickness and dryness of the skin, the number of its pores and various constitutional conditions, factors which materially affect the percutaneous test. The field of the latter is in infants in the first half year of life, and in these a positive reaction points strongly toward the probability of an active tuberculous infection.

2. The Conjunctival Test.—This consists in the instillation into the eye of a drop of a $\frac{1}{2}$ to 1 per cent. solution of old tuberculin in normal NaCl. A positive reaction is evidenced by a varying degree of congestion of the caruncle and conjunctiva which appears in from three to forty-eight hours. This test is a reliable test for patent bacillary tuberculosis, and as such it is superfluous. It does not show whether the process is active or inactive. A negative reaction does not prove the absence of active tuberculosis, and positive reactions may appear in healed tuberculosis, in the clinically nontuberculous, and in the healthy. As a rule, the test does not react positively in those immune to tuberculosis or in the cachexias of tuberculosis and other conditions. The disadvantages of the conjunctival test are that it cannot be employed if there is any inflammatory condition present in the eye, and that it may cause untoward results. Both it and the percutaneous test are at present generally discarded.

3. The Cutaneous Test.—This consists in the inoculation of a small scarified area of the skin, preferably upon the arm, with a drop or two of a 10 to 25 per cent. solution of crude tuberculin in salt solution (or 5 per cent. carbolic-glycerine, 1 part; normal sodium chloride, 2 parts). A positive reaction is evidenced by the appearance in from twenty-four to forty-eight hours of a zone of light pinkish redness about one-half inch wide and accompanied by swelling; finally a papulæ forms, which disappears in from seven to eight days, leaving behind some temporary discoloration of the skin. The advantages of this test are that it is simple, harmless, applicable to febrile and bed patients, and causes no local or constitutional disturbance. A positive result does not point out the site of the lesion, nor show whether the process is active or inactive. It may appear in the clinically nontuberculous, and indicates that the body at some time and in some manner has been infected with the tubercle bacillus. Cases in which positive reactions occur, and in which no lesion is demonstrable, may be accounted for on the ground that the lesion, being insignificant, has been overlooked. A negative reaction points strongly toward freedom from tuberculous disease, but, on the other hand, the reaction may remain negative in the presence of actually existent and clinically demonstrable tuberculosis. Negative results may occur also in certain constitutional conditions, such as general cachexia, and in idiosyncrasy of the skin or the exanthemata. The positive result is of specifically tuberculous nature and its occurrence points toward pathologically existent tuberculosis.

The great field of usefulness of this test is in children, and

in them a positive reaction is an evidence strongly in favor of the existence of tuberculosis. In adults a definite and promptly appearing reaction is moderately good testimony in favor of recent and active infection. Mild, delayed and atypical reactions are valueless in diagnosis since healed foci which have never given definite signs or symptoms may be evidenced by positive reaction. The negative value of the test is impaired to but slight degree by the exceptional cases of tuberculosis which fail to react for the reasons given above.

Baldwin considers the cutaneous test to be the one most suitable for general use, and that it is absolutely harmless. No other test is required for children, because in them a positive reaction is more significant of recent infection and does not often occur in apparent health under the age of 12. Other tests may be necessary in adults to confirm the result of a cutaneous test, but this latter can be advantageously employed as a preliminary in all cases.

4. The Injection or Subcutaneous Test.—This is the last resource and the most searching method of tuberculin diagnosis, and for this reason it is often regarded as the only satisfactory test, in spite of the unpleasant fever reaction. Baldwin regards it as unnecessary in most cases at present, but in instances where a focal reaction is desired, for instance, where a negative cutaneous test requires confirmation, it is of great value. Since the focal reaction in the lung escapes notice in most suspects, the subcutaneous test is of doubtful value in confirming the positive cutaneous reaction.

The most satisfactory tuberculin to employ is Koch's original product, but other filtered extracts may be used. Preparations containing dead bacilli should be avoided; the same is true of emulsions or vaccines, owing to their uncertain and irregular absorption.

Klebs advises the following technique: The site of the injection, which may be under the angle of the scapula or other suitable point, is sterilized, as is also the needle to be used, and the solution of Koch's old tuberculin, diluted with 0.5 to 0.25 per cent. carbolic acid in distilled water, is injected deeply into the tissues. The initial dose differs—Brown advises 0.5 mg., to be followed, if no reaction takes place, successively by 1, 3, 5 and 8 mg. Roepke employs 0.2, 2 and 5 mg. The dose in children must be smaller by 1-10 to $\frac{1}{2}$ than in adults. The reaction appears in 6 to 8 hours as a rule, hence 8 to 10 a.m. is perhaps the best time for the injection.

A positive reaction consists of four phases: (1) The local

inflammatory reaction at the point of injection; (2) the rise of temperature; (3) the constitutional disturbance, headache, malaise, prostration, nausea, etc.; (4) the inflammatory reaction in the tuberculous focus. These may appear simultaneously, separately, or two or more in combination, and differ in their diagnostic value; by some the pyrexia and constitutional symptoms are considered most significant, while others hold that the focal reaction is more pregnant with meaning. If one dose produces a mild, indefinite reaction, the same amount may be given after two to three days, but the dose should not be increased; Koch regards a strong reaction following a repeated dose as especially characteristic and an almost infallible sign of tuberculosis. The interpretation of results must take into account the amount of tuberculin required to produce the reaction, the promptness with which it develops, and the extent of the local and constitutional sequelæ.

In applying this test care should be taken that the tuberculin solution should be freshly made and accurately measured.

The contraindications are as follows: (1) A febrile temperature; the temperature should not have risen above 99.5° F. in the mouth for at least three days before the test. (2) The test should not be employed when a satisfactory diagnosis can be made without it. (3) Rapid pulse. (4) History of recent hæmoptysis. (5) Organic heart disease. (6) Kidney disease. (7) Epilepsy. (8) Addison's disease. The test is inadvisable in hysteria, convalescence from any severe illness, apoplectic habit, marked arteriosclerosis, diabetes, and amyloid degeneration of the viscera.

The subcutaneous test is the diagnostic test of final resort and is the most certain of the tuberculin tests. Like that of the other tests, its clinical value is usually in direct proportion to the smallness of the dose and the degree of the response. The more recent the infection and the more extensive the disease the more delicate is the reaction unless the disease is rapidly progressing or grave constitutional weakness is present. In general it may be stated that the tuberculin tests are very valuable when taken in connection with the patient's history, his physical signs, and his constitutional symptoms.

X-Ray Diagnosis.—Klebs considers the fluoroscope of little use as an aid in diagnosis in most instances; at times it will show a contracted shaded apex, when dullness and marked changes in breathing cannot be discovered, but this is the exception rather than the rule. Limitation of motion at the base is more commonly to be detected and is more valuable as a diagnostic

sign, but too much importance should not be placed upon it. The fluoroscope is of very material aid in the early diagnosis of bronchial gland enlargement, and consequently has a distinct field of usefulness in suspected cases in children.

Rist believes that an increased shadow at an apex may be due to active or old disease or both. When there are symptoms and signs of infection at an apex without an increased shadow on the plate he suspects a fresh involvement in its early stage. A diminished shadow at an apex with no physical signs may indicate active commencing tuberculosis. Radioscopy excels physical examination in its ability to show the extent of pulmonary disease. Beginning central foci are not demonstrable by physical examination, but the X-ray may detect them.

Wolff holds that the X-ray, in connection with the tuberculin test, enables us to locate the lesion when the latter has proven its existence, the ray being of special value where physical signs are equivocal and the symptoms are suspicious.

Krause finds that in early tuberculosis in adults the fluoroscope will detect apical infiltrations which are recognizable on percussion. The X-ray examination is likely to show that the lesion is more extensive than percussion would lead one to suspect. Infiltrations either not demonstrable by percussion or only indefinitely so can often be detected by the fluoroscope, and, when doubtful, confirmed by X-ray photographs. Neither the fluoroscope nor the X-ray photograph will detect early catarrhal processes, but when these are of long standing the apices may show darkly owing to their poor aeration. These shadows do not clear up on inspiration. Diaphragm pictures may demonstrate the presence of incipient infiltrations which would not be shown by other methods. Calcification of the first rib can be detected, and, according to Freund, is an aid in early diagnosis. The clearing of the apices on inspiration which is present in health is often absent in early tuberculosis. The alterations in movement of the diaphragm are of no diagnostic value.

In incipient infections in children and young people apical findings are lacking, hence detection of shadow changes at the hilum of the lung, such as enlarged, indurated, infiltrated, calcified, or caseous bronchial glands or similar processes in their neighborhood, are the more important. Such findings are of extreme value in early diagnosis, but we must depend on the clinical findings to learn whether these processes are active or no.

The great drawback of the X-ray examination in pulmonary affections is the fact that considerable skill is necessary to the proper interpretation of the findings.

Summary.—When it comes to the making of a diagnosis in a case of suspected incipient pulmonary tuberculosis the following factors seem to me to be the most important and the ones on which chiefest dependence is to be placed:

1. The anamnesis. A history of association with other cases of tuberculosis and of previous illnesses such as would point to pulmonary infection is very suggestive.

2. Proper, thorough, and, if necessary, frequently repeated physical examination.

3. Careful observation of the symptoms of toxæmia.

4. The cutaneous tuberculin test.

5. X-ray examination.

6. As a final recourse, a diagnostic injection of tuberculin.

I have omitted sputum examination from this list because positive results are so infrequent in beginning infections, and because negative results are absolutely inconclusive.—*Medical Record.*

Progress of Medical Science.

MEDICINE.

IN CHARGE OF W. H. B. AIKINS, F. A. CLARKSON,
BREFNEY O'REILLY AND F. C. HARRISON.

Infective Liver Simulating Abscess, or Infective Liver of Bozzolo, in the Course of an Infection of Para-Typhoid A.

De Sandro, in *La Medicina Italiana*, thus gives the details of an important case investigated by him. In a workman of 25 years of age, without any features of interest in his family or personal history, in the course of an infection of Para-typhoid A, with fever, at first intermittent and then strongly remittent, with slight and repeated chills, scanty sweats at different times of the day—there was manifested that special hepatic complication which goes under the name of infective liver simulating abscess, or infective liver of Bozzolo (as the writer suggests, it ought to be called, after Bozzolo, who was the first to describe it). The diagnosis of Para-typhoid A was established, not so much by the clinical course as by the positive serum reaction, 1 in 2,000 for the para-typhoid bacillus A, and by the blood culture. From the latter he was able to isolate a bacterium that agglutinated in great dilutions from the serum of the patient and was identified by its morphological, cultural and biological characteristics as the para-typhoid bacillus A. A culture in both of the isolated bacillus, injected into the peritoneum of two guinea-pigs, caused their death, with symptoms of sepsis. At the autopsy of one guinea-pig, one found enlargement of the spleen and of the liver with subcapsular ecchymoses. The histological examination of the liver revealed signs of turbid infiltration and of slight fatty degeneration of the cells, with proliferation of the nuclei.

The increase in size of the liver in the patient, which set in at the beginning of the fever, was rapid, considerable, not uniform, but more marked in the larger lobe. The consistence of the organ was soft, elastic; the superficies irregular from the presence of a slight swelling; pressure increased the pain, which radiated to the shoulder. The hepatic function was not at all disturbed. Ureogenesis was normal, also biligenesis, glycogenesis and the elimination of methylene blue. There was no pleural exudation on the right side. The spleen was a little enlarged.

The size of the liver reached its maximum in the first two weeks and remained stationary in the third; then began to recede at the same time as the temperature. The fever fell completely on the 27th day, while the liver did not reach its normal size until the 50th day. It is probable that the exaggerations of the agglutinating power of the serum towards the bacterium which has caused the infection may become a sign of grave hepatic lesions.

The number of leucocytes and the leucocytarial formula remained normal. The absence of leucocytosis and of polynucleosis, when it occurs, is a good differential sign between infective liver of Bozzolo and hepatic abscess.

Hitherto there have not been recorded cases of infective liver simulating abscess in the course of Para-typhoid A.—Translated from *Giornale Internazionale delle Scienze Mediche*, by Harley Smith.

Analysis of Seventy-two Cases of Pneumothorax

Ayer (*Boston Medical and Surgical Journal*) reports seventy-two cases of pneumothorax which occurred in the Boston City Hospital during ten years, and adds to his number fifty-five cases previously reported by Dr. Morse. Of his 127 cases sixty-nine per cent. were tuberculous. Most were young or middle-aged men, and most had a recent history of less than six months' illness. The left side was most often affected. Pain and dyspnoea were by far the most common symptoms at onset. The treatment in these cases was for the most part essentially that of the fluid present; the prognosis was anything but encouraging. Pneumothorax seems most frequently to occur on the side of a rapidly advancing process where adhesions are either absent or friable. The other lung and other parts of the body are apt to show long standing tuberculosis. It may follow a long standing empyema (of three months or more duration), by establishing a pleuropulmonic fistula or other means as yet not understood. The onset in these cases does not usually show the acute symptoms so characteristic of the tuberculous cases, but may even cause temporary relief. Operative treatment in these cases is frequently permanently successful. In traumatic cases we see fluid developing rapidly; the air does not, as a rule, last long and is probably of no serious import. Artificial pneumothorax occurred in nineteen per cent. Though agreeing with some other series, this is altogether too high a percentage. By use of a simpler and safer instrument than that commonly employed, we feel that artificial

pneumothorax, although its occurrence is in many cases probably of no ill consequence, could be largely avoided. X-ray examination has frequently made difficult cases clear, rendered diagnoses more exact, qualified prognosis, and explained the effect of treatment. Since this form of examination has come into more constant use in this hospital, pneumothorax has been more frequently diagnosed.—*Medical Journal*.

Diagnosis of Duodenal Ulcer

In a contribution to the *Deutsche Medizinische Wochenschrift* Dr. Günzburg discourses on the signs and symptoms of duodenal ulcer. His experience is based upon eighteen cases, seventeen of which occurred in males, and in all he was able to confirm the diagnosis either by operation or by post-mortem examination. According to Moynihan and other British authorities the history of hunger pain coming on two or three hours after a meal and relieved by food is diagnostic of duodenal ulcer. These symptoms are generally rebellious to medical treatment, may persist for some weeks or months, and then disappear spontaneously to return again later. But Dr. Günzburg agrees with Ewald that this sort of history is not pathognomic of duodenal ulcer, and may occur in other morbid states, especially in conditions of arterial sclerosis. He lays emphasis on the occurrence of traces of blood in the faeces, and thinks that this sign, combined with the hunger pain, constitute a definite syndrome diagnostic of duodenal ulcer. A further sign of importance in a man between the ages of thirty and sixty is a diminution in the hæmoglobin content of the blood, and a fourth sign to which he draws attention and which appears hitherto to have escaped observation is the presence of a tympanitic area in the region of the quadrate lobe of the liver, due to a dilatation and distension of the duodenum with gas.—*The Hospital*.

Electrical Treatment of Infantile Paralysis

An exhaustive report upon the whole question of electricity in the treatment of infantile paralysis has been prepared by Zimmern and Bordet (*Arch. d'elec. méd.*, February 10th, 1910.) The treatment, they state, is based upon precise physio-pathological indications—it is a rational therapeutic. Its principal purpose is to reduce to a minimum the infirmities caused by the medullary lesions, and to restore as far as possible the voluntary contractility of the muscles. Of all the physical agents, electricity is the

only one which is capable of provoking a muscular contraction analogous to the voluntary contraction. Massage does not produce the physiological contraction of the muscle, and the misleading appearance of suppleness to which this method gives rise when it is used by itself renders it inadvisable. As an adjuvant to electrotherapy, the authors are of opinion that the rôle of massage is an insignificant one. The choice of a current depends upon the results of the electro-diagnostic exploration. If the muscles have conserved faradic excitability, recourse may be had to the currents of the induction coil. Galvanic interrupted currents are employed when the degenerate muscles respond to that form of excitation. Great care must be taken to avoid fatigue, and the authors proscribe the automatic electrization of groups of muscles. Electrical intervention should be made very cautiously at the beginning of the treatment. There should be no attempt to make a complete electro-diagnosis at the first *séance*. When the treatment is fully established the *séances* may last for an hour, providing always that there is no fatigue. The repetition of the *séances* should be very frequent—taking place every day during the active period of treatment, and, if possible, twice a day. The duration of the whole treatment, unfortunately, must be counted by years. It is rarely that one year suffices, more frequently it requires three. The treatment may be suspended with advantage during the summer months, and the patient sent to the seaside or the mountains. This change of air, without acting directly upon the paralysis, is of value to those children whose general state has suffered from their inactivity. During the second year of treatment the authors counsel the use of light orthopædic appliances, and during the third year these, together with kinesiotherapy, may be increasingly employed, while the degenerate muscles are still electrized with persistence. The cessation of treatment is indicated when, for many months, the amelioration has shown no progress, either from the point of view of the voluntary movableness or from that of the electrical reactions. Summarizing the whole subject, the authors state that if the treatment is started sufficiently early and continued with method and persistence, it produces, as a rule, in the course of time a reduction of the impotence and a return, more or less remarkable, to functional power.—*British Medical Journal*.

"606" in Nervous Diseases

Treupel (*Munich Med. Woch.*) said that in six cases of syphilis of the central nervous system, he obtained a quick and

good result in four, which lasted for months. In twenty-one cases of tabes, he found the course after the injection to be the same, and, as he thought, typical. After from two to three days the lancinating pains increased not only in the neighborhood of the injection, but also in the regions which were previously the seat of the pains. Then the pains subsided rapidly, the general condition improved, the weight increased, and there was an increased feeling of strength. The disturbance of sensation, the paræsthesia, disturbance in the function of the bladder and of speech, and the ataxia were improved. This improvement lasted for some weeks, but unfortunately was not permanent. Pupillary symptoms and tendon reflexes were not affected. Commencing optic atrophies did not advance. In the minority of cases Wassermann's reaction became negative after the injection. In ten cases of progressive paralysis there was a mitigation of the uncouth change of voice. For a few days after the injection the conditions of irritation gradually decreased as a rule, but not in all cases. Otherwise no objective improvement had been noticed after an observation lasting in one case nine months. Willige concludes that the effect of "606" upon the meta-syphilitic diseases of the nervous system cannot yet be stated with certainty. Some experiences indicate the possibility of obtaining improvements, or remissions, in paralytics. The most suitable procedure, whether the single injection of a large dose, or of several weaker ones, or of combinations with other remedies, must be determined by further experiment. He thinks multiple small doses to be preferred. The remedy does not always exert a distinct, regular influence upon Wassermann's reaction. When the reaction becomes negative after the introduction of the remedy it seems to become permanently so in only a small percentage of the cases. The influence upon the Wassermann reaction does not seem to be dependent on the size of the dose nor to go hand in hand with the improvements or injuries observed after the injection. In metasymphilitic diseases of the central nervous system, including paralysis, the use of "606" is generally no more dangerous than in other diseases. Even affections of the optic nerve do not *a priori* exclude its use. Diabetes in a severe form is a contraindication to its use.—*New York Medical Journal*.

OBSTETRICS AND GYNECOLOGY.

IN CHARGE OF ADAM H. WRIGHT, K. C. M'ILWRAITH, FRED. FENTON
AND HELEN MACMURCHY.

Four Caesarean Sections on One Patient

Davis reports a case which illustrates the possibility of repeatedly emptying the full-term uterus successfully for the mother and child by the Cæsarean method. The first child was only delivered by craniotomy, the second, third, and fourth by the Cæsarean method. The patient then had an abortion when six weeks pregnant, and arrived at the hospital two years later having been in labor for some hours. During the operation it was found necessary to make an opening rather larger than usual because the cicatricial tissue did not stretch as readily as in former deliveries. There were also rather extensive mesh-like adhesions in the omentum and about the intestines above the fundus. The anterior uterine wall had irregular thin places in it, and the cicatrix of the last operation was plainly visible. After delivery there was profuse hæmorrhage from the sinuses in the uterine wall and from the placental site, the uterus being in a state of atony, although ergot had been given before beginning the anæsthetic. From the condition of the uterine wall and the nature of the adhesions in the omentum it was considered unsafe for this woman to bear any more children. A section was taken out of the left tube and the peritoneum sutured over the uterine end. The right tube could not be found without breaking up adhesions and endangering the recent uterine wound. Recovery was excellent, the patient leaving the hospital on the sixteenth day.—*Bull. Lying-in Hosp., N. Y.*

Early Diagnosis of Pregnancy

A. Spire (*Gaz. de gyn.*) believes that it is possible in all normal cases to affirm the existence of pregnancy as early as the second month in so far that it is a clinical if not a medico-legal certainty. The reasons for this diagnosis will be the cessation of menstruation and the changes in shape and consistency of the uterus and in its position. Suppression of menstruation is a point of the first importance in establishing pregnancy, provided that the patient has had her menses regularly throughout her life. With persons whose menstruation has been irregular it is of less value. Outside of pregnancy troubles must be severe to stop a regular menstruation. Those persons who think that they have had their menses during pregnancy have been mistaken,

due to a mistaken interpretation of the facts; the flowing that has occurred has had neither the character nor the duration nor the periodicity of the menstrual period. Inspection will show the changes of the breasts, the mammary areola, and the violet coloration of the vulva. But the most important points are obtained by abdominal palpation conjoined with vaginal examination. The large, soft, hypertrophied cervix may be simulated by other conditions of the uterus due to disease. It is to the changes in the fundus and body of the uterus that we must look for valuable information that is not to be confounded with signs of disease. For the vaginal examination the bladder and rectum must be emptied, and two fingers introduced into the vagina. The enlargement of the body is plainly felt, its shape is globular, and this is especially to be appreciated in the lateral culs-de-sac. The change in consistency is great; it gives a sensation of elastic softness to the examining finger, like a ripe fig. The region where cervix and fundus joins undergoes softening, such that it seems to yield before the finger and the body may seem to be separated from the cervix. With the two fingers in the vagina, one on each side of the body, we may tip it from side to side. If the contraction of the uterus can be felt it is a still more positive sign.—*Amer. Jour. Obst.*

Icterus and Pregnancy

Kühn (*Der Frauenarzt*, 1909, Part 10) reports the case of a pregnant woman, 31 years of age, suffering from jaundice during her second pregnancy. She had borne two children, the last being born nearly two years before she came under observation; she had also been subject to attacks of gall-stone colic for several years, there was jaundice which never disappeared completely. By the sixth month of her third pregnancy the patient had become strongly jaundiced and very cachectic. Attacks of biliary colic occurred weekly. The fæces were white, the urine bile-stained but free from albumen. Malignant disease of the ducts was feared, but the repeated acute attacks seemed to indicate calculus. Rissmann, of Osnabrück, operated, opening the duodenum and removing from the duodenal end of the common duct an impacted calculus of the size and form of an acorn; it bore no facets. By the eighth month the patient was free from all symptoms of jaundice, and she was delivered spontaneously at term of a healthy child, weighing 8½ lbs., which she was able to suckle. It was not jaundiced, nor was any bile pigment detected in the liquor amnii yet the membranes were slightly icteric. The puerperium was normal. Kühn notes that the induction of labor

does not favorably influence jaundice co-existent with pregnancy, whilst an operation which can remove the source of biliary obstruction may be just as well performed during a pregnancy as on a non-gravid subject; in short, when jaundice of a kind not to be cured by medical and therapeutical means complicates pregnancy, an operation on the gall ducts is requisite and the induction of labor is not justifiable. Potocki, Kühn adds, has demonstrated the close association of jaundice with pregnancy. It may develop during gestation whilst if already present before conception it tends to grow worse afterwards. On the other hand, the pregnancy is much less prejudiced by the jaundice: Kühn quotes Cocking's case of persistent jaundice of fifty years' standing who became pregnant for the first time at the age of 40, and was gravid twice afterwards.—*Brit. Med. Jour.*

The Birth Rate in Rural Districts

The recent statistics of the New York State Department of Health cast a sidelight on the "race suicide" question. From them the startling fact appears that in the cities the excess of births over deaths is 5,947, while in rural localities, which have always been regarded as comparatively free from any artificial checking of increase in population as well as conducing to greater average longevity, the excess is only thirty-seven. The greater sophistication of city dwellers, a direct influence of more artificial modes of life, leading to a sacrifice of the parental instinct to the accompanying needs, and a shorter life ratio have hitherto been regarded as the influential factors of a disproportion between births and deaths in cities. To what is the change attributable? In the farming communities children are, or used to be, a distinct asset after their very earliest years, as by the aid they gave to the general work they more than paid for their keep and even added to the family wealth. Is it possible that the increased educational requirements are telling in the country districts also? Under the old *régime*, the peasantry of any country—its "brawn and sinew"—multiplied and thrived out of proportion with the "upper classes." Is the recent introduction of "modern conveniences" into even isolated country districts having at first a depressing effect on the stamina of the race, just as it had on the city dwellers, who, however, are now becoming adjusted to their environment and returning toward the normal? If that is the explanation there need be no disquietude over a temporary condition. But the condition appears so anomalous as to demand prompt investigation as to its cause or causes.—*N. Y. Med. Jour.*

OPHTHALMOLOGY AND OTOTOLOGY

IN CHARGE OF J. T. DUNCAN.

Family-physician Refracting as a Factor in Medical Practice

It is a well-known fact that family physicians, as a class, do not attempt to do refraction. Why is this—why should not the family physician refract all ordinary cases?

An article in *The Medical Fortnightly* by L. Connor discusses the question. Few (American) medical colleges so teach refraction that their students can practise it with satisfaction to themselves or patients. Nor is the spirit of college teachers and the general profession such as to inspire that enthusiasm necessary to overcome the inherent difficulties of refraction. Yet the eye is a part of the human body. Doctors have worked out eye structure and function, and they alone can fully appreciate the disorders that refractive defects may induce. These and allied considerations establish refraction as an essential part of general medical practice and indicate that every family doctor should be as able to refract all his simple cases as he is to manage cases of simple surgery, obstetrics, internal or external disease, or other simple human disorders.

Yet the most superficial inquiry demonstrates that such family physician refraction is the exception. Thus of the 135,000 physicians in the United States, the most careful study fails to find above 3,000 able to refract, or one in forty-five.

Facing this condition, only two courses are open to the profession, viz.: Either qualify all its members to do their own refraction in conjunction with ophthalmologists, or leave the matter in the hands of opticians. Since the latter course connives at the admission of laymen to medical practice without a medical education, friends of the medical profession must reject it and accept the "Michigan idea" to qualify every physician to do simple refraction. The "Michigan idea" is so named because the Michigan State Medical Society really started this movement, viz.: the movement to qualify every physician to have a working knowledge of simple refraction. The history of the movement is as follows: The Michigan State Board of Registration had notified medical colleges that after February 12, 1909, it would require for license a working knowledge of simple refraction. Many medical colleges whose graduates were likely to seek a license to practise in Michigan began qualifying their students for such requirement.

The American Medical Association took the matter up and a section committee reported "that every practitioner should be able to manage refractive defects of the eye and its infectious disorders."

The above two events took place in 1909, but the idea spread rapidly, and in 1910 advocates of the "Michigan movement" were found in many States.

1. Vermont, Nebraska and Utah have joined Michigan in requiring for license to practise medicine a working knowledge of simple refracting.

2. On May 3rd, 1910, the Detroit Ophthalmological Club invited to a conference on the "Economic Value of Family Physician Refracting" officers of the Michigan State Medical Society; officers of the Wayne County Medical Society; officers of the Michigan State Board of Registration; the deans of the Medical Department of the University of Michigan and Detroit College of Medicine, and family physicians doing simple refracting. After several hours of frank discussion, the movement was unanimously endorsed and fitting resolutions adopted.

3. On June 6th, the American Academy of Medicine unanimously adopted the following: "Whereas, The refracting of human eyes is an important part of medical practice;

"Whereas, The physicians now qualified therefor are quite inadequate for the people's needs: Whereas, The Ophthalmic Section of the American Medical Association says 'That relief from this inadequacy is possible, only by training our 135,000 physicians to 'manage infectious diseases of the eye and its refractive defects:' "

"Resolved, That the American Academy of Medicine:

"a. Recommends medical colleges to arrange a curriculum that will equip their students with such training.

"b. Approves of those State registration boards now requiring it for license; and

"c. Advises like action by other State registration boards at an early date."

4. On June 6, 1910, the National Confederation of State Medical Examining and Licensing Boards resolved, "That the National Confederation of State Medical Examining and Licensing Boards:

"a. Recommends medical colleges to arrange a curriculum that will equip their students with such training;

"b. Approves of those State registration boards now requiring it for license; and

"c. Advises like action by other State registration boards, at an early date."

Other important national Medical Societies have passed similar resolutions, and only recently the State of Kentucky has decided that all medical students, before they are allowed to graduate, must be able to do simple refraction. The movement, then, bids fair to become universal in the United States.

It is suggested that every doctor hang in his office a Snellen test card, and lay upon his table a copy of Jaeger's test types. The use of these in all cases of doubtful diagnosis will surely promote his knowledge of and confidence in the helpful power of simple refraction by family physicians. As the art becomes easy there will accrue an increased intellectual power; larger influence over patients and the community; more successful results in other than eye cases; broader and more correct views of general medicine, and larger financial rewards. Verily family physician refracting is the key to a vast professional uplift. It is respectfully urged that medical colleges drop the vain attempt to teach undergraduates operations on the eyeball, which no family doctor can perform, and devote the time and energy thus saved to training each student to do family refracting with comfort to himself and satisfaction to his patient—in short, train the student in the things that he can practice, and omit the things he can never hope to do.

Mark Hovell, before the *British Medical Association*, dwells upon *The Connexion between Irritation of the Mucous Membranes Throughout the Body and Middle Ear Catarrh*. He first emphasizes the fact that the mucous membrane which lines the tympanum and eustachian tube is continuous with that which lines the nose and its accessory cavities, and, through the nasopharynx, pharynx and œsophagus, is in direct communication with that which lines the stomach and intestines, yet the vast area with which the tympanum is thus connected is sometimes forgotten, and it is not realized that an irritation in one part of the mucous membrane is communicated in a greater or lesser degree over the whole of its surface, and must therefore affect the special organ which has to be treated.

A swollen condition of the lining membrane of the eustachian tube, preventing air circulating in the tympanum, produces the first stage of middle ear disease.

Next in frequency to this is the chronic congestion of the naso-pharynx, with an excessive secretion of mucus. This is due to nasal obstruction.

The author dwells on the fact that the operation for adenoids is often carelessly performed. He often finds in examinations made long after the operations the track of a curette may be seen

along the centre of the naso-pharynx, and adenoid growth left on each side of it, in the position in which, from an aurist's point of view, it is most important that it should be removed—namely, the area around the pharyngeal extremity of the eustachian tube—and, consequently, one of the principal objects for which the operation was undertaken is not attained.

The adenoids being left in the position spoken of, closure of the eustachian tubes is likely to result.

Another frequent cause of closure of the eustachian tubes, as the author points out, is granular pharyngitis, which was formerly thought to be connected with "clergyman's sore throat" and was treated by local cauterizations. These measures are now condemned, for granular pharyngitis is usually the result of irritation of the gastro-intestinal and utero-vaginal mucous membrane, and consequently is as common amongst females who do not use their voice as amongst the class of males who were supposed to specially suffer from it.

The author has had under his care a number of cases of naso-pharyngeal catarrh and granular pharyngitis associated with a vaginal discharge sufficient in quantity to cause discomfort, occurring in both married and unmarried women, which have not got well until the patient has been placed in the hands of a gynæcologist for treatment of the cervical catarrh, and in many cases he has been informed that a large erosion existed.

He concludes: "I have dwelt specially upon the relation between granular pharyngitis and naso-pharyngeal catarrh in connection with uterine displacement and irritation of the utero-vaginal mucous membrane, because it is not as yet universally recognized, and the treatment of middle-ear affections, catarrh in the naso-pharyngeal region, etc., is chiefly confined to local measures, which I hope I have shown will not be curative in many instances until the reflex sources of irritation are removed."

Editorials.

A SKETCH OF MEDICAL LEGISLATION AFFECTING CANADA, MORE ESPECIALLY THE PROVINCE OF ONTARIO UP TO THE PRESENT TIME— SHOWING WHAT IT HAS DONE TO EL- EVATE THE STANDING OF THE MEDICAL PROFESSION

This article contains matters which all members of the Ontario Medical Profession should know—relating to important past legislation, to be able to decide what is the proper and wise course to take now in medical education, so as to promote the best interests of the profession, and of the public in Ontario.

The earliest Medical Act affecting Canada was one passed in 1788 by the British Parliament. It provided that no one should practice Physic, Surgery or Midwifery within the Province of Quebec (which then included all Ontario and a great deal more), or in the towns of Quebec and Montreal, without a license. In early days university graduates in Medicine, and military or naval surgeons, were exempt from its provisions. This was when there were no medical colleges in Canada.

In 1815 a Medical Act was passed for Upper Canada (now Ontario) having very similar provisions to those contained in the Act of 1788. At this time the number of medical men in the Province is said to have been about forty. The population was then small. What a contrast this presents to the present state of things with about 2,500 registered medical practitioners in Ontario!

In 1818 a new licensing Medical Act was passed. It authorized the appointment of a Board of Medical Examiners to examine all candidates for license. With a brief interval, this Board continued to exist for many years, and only finally discontinued its work when the College of Physicians and Surgeons of Ontario was called into existence in 1866. For a short time, from April, 1839, till July, 1841, it was in abeyance in conse-

quence of the passing of an Act of the Legislature of Upper Canada incorporating the College of Physicians and Surgeons of the Province and conferring upon that body the duty of examining all applicants for license to practise medicine in the Province. This Act was disallowed by the British Government in December, 1840, on the representation of the Royal College of Surgeons of England, that it infringed the chartered rights of that college.

The Medical Board was then immediately re-appointed and resumed its duties in July, 1841. For twenty-five years longer it continued to hold its examinations regularly every three months, and did good service to the Province, its work being well and faithfully performed. Those candidates proved to be the wisest who prepared for their examinations long and carefully, for it was considered from early times to be a very good test of fitness to receive the Governor's license.

For several years before there was any regular medical school in Upper Canada—as early as during the “thirties,” Dr. John Rolph, who is deservedly known as the “Father of Medical Education” in the Province, was in the habit of receiving pupils into his house in York (now Toronto) from various parts of the country, to whom he gave a very thorough medical education—which he was exceptionally well qualified to do. Born and thoroughly educated in England, he was one of the most highly gifted of the many prominent men of that day, who in various walks of life made Upper Canada their home. Although a member of the legal profession, having been called to the bar in London, England, and a member of the Inner Temple, he was also a favorite pupil of Sir Astley Cooper, and a member of the Royal College of Surgeons of England. He loved the medical profession dearly, and was never happier nor more at home than when teaching its various branches to the young men whose good fortune it was to have so able and interesting a teacher. Some of his early pupils subsequently became distinguished, and many still occupy high positions as medical teachers and practitioners.

Humble as this building was, it was Ontario's first medical school, and small as such a beginning may appear when com-

pared with the finely built and well equipped medical colleges of to-day, teaching of a very high order was given in it, and with a punctuality, earnestness, ability and fulness, not to be surpassed, and which is not now surpassed anywhere in Canada. True, since those days the study of medicine has greatly advanced—some subjects now being taught as separate departments, which were then comparatively unknown—but what at that time was considered essential to a good medical education, viz., complete instruction in Anatomy, Physiology, Materia Medica and Therapeutics, including the necessary knowledge of Chemistry, Medicine, Surgery, Midwifery and Diseases of women and children, was there exhaustively given. It is indeed a question whether to-day the young men studying anatomy in any of our schools are better, or in most cases even as good anatomists as were the students of those days, although the latter did all their work in so primitive a college building, and were not allowed the use of illustrated books or plates to any extent, but were obliged to study and trace out for themselves every part, great or small, of the human body, and were constantly and thoroughly examined in their work as they did it.

Dr. Rolph himself never neglected this latter essential part of a student's training. Speaking of the founding of his school in an Annual Announcement issued a good many years later he says that his School of Medicine was founded in 1843, and incorporated by Act of the Legislature in 1851, so that this school was really the first medical teaching body established in Upper Canada, and it was from the first entirely self-supporting.

For a long time prior to the passing of the Ontario Medical Act as it now exists, the old Medical Board of Upper Canada (Ontario) was the general licensing body of the Province. As teaching medical bodies gradually increased with the increase of population, the desire naturally became stronger and more general on the part of students to graduate in Medicine rather than to be as heretofore content with a Provincial license. A medical degree obtained from a British or Colonial University entitled its holder to a license, and at least one of the incorporated Medical Schools obtained the legal right to examine and

issue its certificate to successful candidates, and this carried a license with it. Two other licensing Medical Boards had sprung up, conducting their examinations under special Acts. One of these was the "Homœopathic" and the other the "Eclectic" Medical Board. The former came into existence in 1859, the latter in 1861.

With such an increase in the number of licensing bodies of one kind and another, it was self-evident that no little danger was likely to arise from a certain amount of competition, which would be inevitable whatever efforts might be made to guard against it, and would tend to make the obtaining of a license easier than had hitherto been the case. The members of the profession almost to a man justly feared that the standard of medical training was likely, if not certain, to be lowered rather than raised under such conditions. This had been wonderfully well maintained so far. But now, prominent medical men, teachers for the most part, asked, whether it would not be very advantageous to have a central Medical Board established, before which, and wherever educated, *all* candidates for license should have to be examined? This question admitted of but one reply, and that was in the affirmative—provided that such a Board could be so constituted as to inspire perfect confidence in its absolute impartiality as between the various graduating and teaching medical bodies. It would undoubtedly be a great advantage. As might have been expected, however, the first suggestions made, and sought to be passed through the Legislature, were crude, and were on this account strongly opposed by many who entirely believed in the "Central Board" principle.

In 1866, "Dr. Parker's Bill," as it is called, was passed. This was the first Act passed since that which had been many years before disallowed, viz., that for the Incorporation of the Medical Profession as the "College of Physicians and Surgeons of Upper Canada." Dr. Parker's Bill established a Council of Medical Education and Registration for the Province, consisting of twelve elected territorial members, and one representative chosen by

each graduating or teaching medical body then existing or hereafter to be organized. All persons licensed under Upper or Lower Canada Acts at the time it was passed, were entitled to registration. The duty of the Council was to lay down the medical curriculum for the medical colleges, the graduates of which would be entitled to registration. Candidates who had not attended Canadian colleges had to show that they had completed the curriculum as ordered, and to be examined by a Board appointed by the Council. But this Bill left the Homœopathic and Eclectic Examining Boards untouched and free to continue their work of examining candidates periodically. This circumstance alone, gave Upper Canada three licensing bodies where one only would, it was believed, give a much better guarantee to the profession, and to the public, of the fitness of those passing it. In some other respects this Bill of 1866 was unsatisfactory. In 1869 it was repealed, and "The Ontario Medical Act" was passed. Under this Act the great change was made of giving the Homœopathic and Eclectic bodies representation on the Council.

The several universities and medical teaching colleges also, in consideration of each having *one* representative on the Council, agreed to give up their licensing power. The great aim of making a Central Medical Board appointed by the Council possible, had thus been attained, and a good uniform curriculum might reasonably be expected as the result. It was clearly understood, and in some cases provided by law, that the teaching colleges would be represented on the Board, and that provision would be made for the examination of Homœopathic candidates by a special Examiner on the few subjects wherein this was thought necessary. By the amendments introduced into the Act in 1874, the Eclectic body was merged in the general profession and its special representation on the Council and Board of Examiners was no longer called for. The Act was still further amended in 1887, 1891 and in 1893. It now regulates all medical educational matters as regards the curriculum to be followed by students who intend to live and practice in Ontario—from matriculation to the end of the course of study.

The entrance or matriculation examination of the Council has been gradually raised until a certificate is now required to be presented to the Registrar for each candidate for registration as a medical student, showing that the examination conducted by the Education Department on the course presented for matriculation in Arts, which must in all cases include Physics and Chemistry, has been passed. Graduates in Arts are exempt from this requirement under the Statute. A certificate of having attended one course in Arts in a British or Canadian university, and of having passed the examinations required at its close, entitles to registration.

The medical curriculum extends now over a period of five years. Four winter sessions of eight months each, with the usual twenty-four months of hospital attendance, etc., etc., are required. The fifth year must be spent either all in Hospital and Practical work and study, or six months of it with a medical man, and the other six at college or practical clinical and hospital work. The Ontario Medical Council's Examining Board examines candidates in Toronto and in Kingston, and now in London, Ont., twice a year, in the spring and in the autumn.

As no medical teaching body can, under the existing law, have legally more than *one* of its representatives on the Medical Council, so only *one* of its members can represent it on the Council's Board of Medical Examiners, according to the same Act.

It has always been understood that these single representatives on the Medical Council, and on its Board of Examiners, should be appointed only to represent bodies which are either actually teaching medical bodies, or which regularly examine for degrees in medicine. This most wise and just provision has, however, for some years past, been openly ignored, which is a matter requiring immediate attention and correction. To give to all medical teaching or examining bodies the right to demand registration from the Council, without their students taking and passing its examinations, as some suggest, would be a most serious and disastrous retrogressive step. If this privilege were given to any one of them, it would, in justice, have to be extended

to *all*, as was the case long before the formation of the Medical Council and its Board of Examiners, and “pathies” of every sort and kind would certainly claim the right granted to others. Thus, the former bad state of the profession, which existed far too long, would be at once re-established to the manifest danger and injury to the public, and to the lowering of the entire profession in public estimation.

An independent and a fairly constituted Central Board, such as was intended, and created under the present Act, is absolutely indispensable—and so far from being an injury or a wrong to any good student to have to submit to its extra examinations, these are almost as good for his future success as a practitioner as attending another half, or even another whole hard working session would be.

There is no question, nor can there be, that it is the public at large whose interests are greatest and will be most and best guarded by the maintenance of a thoroughly good, impartial Central Medical Board—such a Board can cast no slur whatever upon any of our teaching Medical University Faculties, or Medical Colleges now existing, or which may hereafter be established, whose students would all have to be examined by it. But it absolutely necessitates, and this is the strongest existing and unanswerable argument in favor of such a Board, the most careful and the fullest and best possible practical teaching of all students, wherever they may have been educated, and this feature will tend materially to improve the teaching in all the medical institutions of our country.

THE DISCIPLINARY POWERS OF THE MEDICAL COUNCIL

Mr. Justice Riddell decided that the purpose of the legislation upon which the case rested was to give the College the right to inquire into any case where a doctor was accused of either a criminal offence or a trivial misdemeanor.

Dr. ———— was acquitted in the Court of General Sessions at Cobourg in December, 1909, and his counsel urged that the

Medical Council had no right to open up a judiciary inquiry upon a case which had already been tried and completed. His Lordship ruled, however, that the law upon which the argument was based prevented a further investigation only upon the part of another Criminal Court. The conviction in a Criminal Court was never accepted as evidence in the Civil Court, and the investigation by the Council was a civil one.

With regard to another alleged illegal operation, it was claimed that the Medical Council had not power to investigate such a criminal offence. The Medical Act provided two causes for which the physician might have his name removed, the first was an offence which would be deemed indelible in Canada, and the second was infamous or disgraceful conduct in a professional respect.

The Judge ruled that the two provisions overlapped, and hence that the Council had the power to investigate a criminal offence when it was also professional infamous misconduct. He thought that the present wording of the Act was clearly intended to give the Medical Council power to proceed with an inquiry without a court conviction. The Act was certainly not intended to give a medical man who had committed a crime the right to snap his finger and proceed with his infamous work so long as he was not prosecuted nor convicted.

NEW HOSPITAL IN PETROLEA

Mr. J. L. Englehart, Chairman of the Northern Ontario Railway Commission, has made arrangements to present his beautiful residence and a certain amount of land in Petrolea to the corporation of that town with the understanding that it is to be used as a public hospital for the citizens of Petrolea and the County of Lambton.

This magnificent gift is being made as a memorial to his late wife and will be called the Charlotte Eleanor Englehart Hospital. Mr. Englehart is not only giving the building and grounds, but he is making the necessary alterations and providing a complete equipment at his own expense.

The property includes the residence, a fine stable and 30 acres of land, which cost over \$50,000, but it is stated by Dr. Bruce Smith that it could not be duplicated in its present condition for less than \$100,000. When the alterations are completed there will be two large public wards on the ground floor, holding 20 beds, and certain other rooms for the use of the staff. On the second floor will be a number of private wards and an operating room. The top floor will be occupied by the resident physician. A large conservatory attached to the house is being converted into a sun parlor for convalescents.

Mr. Englehart had hoped to hand over the property to the town corporation on December 31st, the second anniversary of his wife's death, but this formal ceremony will probably have to be delayed for a few weeks. The project of giving the property for hospital purposes was entertained by Mr. Englehart and his wife for some years before her death.

MEDICAL MEN AND THE BRITISH PARLIAMENT

As compared with Canada the proportion of medical men in the British Parliament is very small. In the last Parliament out of a total of 670 members, there were only 13 who passed medical qualifications, and among these were some not engaged in practice. Canadians of course took some interest in the recent contest in which physicians or surgeons were engaged. Many of us took special interest in the candidatures of Sir Victor Horsley and Sir Robert Finlay, largely on personal grounds, and particularly because they were running in university constituencies.

One would naturally expect that men such as these would get out of the common rut, but we find from their own utterances that their platforms and addresses were similar to those of the narrow and bigoted politicians on both sides. Sir Victor Horsley, who was the unsuccessful candidate for the University of London, included in his address the following sentences: "My first object if I were returned would be to further the application of scientific methods in the Legislature, especially in relation to

public health matters, education in all its grades, and the extremely important measures now actually being prepared to meet the urgent needs of the public."

Probably all will agree that this sentence is worthy of the man. Other sentences, however, are not so satisfactory. He goes on to say: "As the representative of a University like ours, which was founded as a protest against and a practical remedy for evil born of monopoly and privilege, I would support to my utmost the constitutional steps taken by the present Government to abrogate the injustice and injury to the national welfare neglected by the House of Lords in rejecting and mutilating liberal legislation."

"I am a free trader, economic experience at home and abroad, the success of the Budget and the world-wide discontent, rising strongly against protectionous tariffs prove the scientific truths of the principles of free trade. Most particularly does the iniquity of the proposition to tax the people's food repel me as a biologist and as one who has been working for many years against the cause of physical deterioration in the nation."

Sir Robert Finlay, the successful candidate for Edinburgh and St. Andrew's Universities, used the following sentence in his address:

"The great and predominant issue at this election is whether the Government is to be allowed to get rid of all effective control by a Second Chamber by the action of any temporary majority in the House of Commons. The proposal of the Government, as embodied in their parliamentary bill, would enable the House of Commons, not only without the approval, but contrary to the wishes of the vast majority of the nation to pass into law without any appeal to the electors any measure however vital affecting our institutions. It is clear that one of the first purposes to which these dangers and despotic power, if given, will be applied is the setting up of a Parliament in Ireland which would be a calamity to that country and a source of weakness to the Empire. The speeches of some of the most influential members of the Cabinet left no doubt that freedom from the control of a Second Chamber would further be used to

pass into law measures of a socialistic character, destructive to the public credit, impairing the security of property and detrimental to the interests of all classes of the community."

THE BANQUET AND PRESENTATION TO DR. J. ALGERNON TEMPLE

The banquet to Dr. Temple in the York Club, Toronto, on the evening of November 26th was one of the most interesting and charming functions that the medical profession of Toronto has ever known. The magnificent success of the entertainment afforded much real pleasure and satisfaction to all present. It was unfortunate that the dining-room was too small for a larger assemblage, and those who had charge of the arrangements were much embarrassed by lack of space. It was found that many more would like to have attended if they could have been allowed.

Dr. Temple's friends are not confined to Toronto and adjacent districts. They live in all parts of North America, and, in fact, in almost every other part of the English speaking world.

Dr. Temple, as a Teacher of Obstetrics and Gynæcology, was one of the best in the world. In addition to his teaching ability he possesses in a rare degree those qualities of heart and mind which command the love and respect of all who have the pleasure of coming in contact with him.

We were much struck with the remark of a prominent layman when he heard of the banquet. His words were to this effect: "I am glad to hear that you are going to thus honor Dr. Temple, who well deserves such recognition; he is one of the grandest men your profession has produced."

We have much pleasure in tendering our thanks and our congratulations to the Committee in charge. The banquet was a success in every way. There was a delightful atmosphere of good fellowship and respect and love and admiration for the distinguished guest of the evening.

THE PRESENTATION.

Dr. Jno. T. Fotheringham, the Chairman, made a few appropriate remarks in opening the post prandial part of the enter-

tainment, and then called on Dr. Arthur Jukes Johnson, who read the following address:

To J. Algernon Temple, M.D.C.M., LL.D., M.R.C.S. (Eng.):

Dear Sir,—We, whose names are hereto appended, representing your former colleagues and students, your brother practitioners, and your friends, wish to express to you our profound sense of the eminent services which you have rendered to the profession of medicine, and to the public, during the many years of your practice, and particularly in your term of office as Professor of Obstetrics and Gynaecology.

We have learned with much regret of your recent decision to retire from the Chair which you have so long adorned. We recall, many of us with a vivid sense of our indebtedness, the lucid, orderly succession of your lectures, their scientific but severely practical turn, their substratum of long experience and sound common sense.

We venture moreover to refer to the service you have done to the medical profession, not of this city alone, but of many and wide-scattered communities, in the standard which has been always exemplified in yourself of unvarying rectitude of motive, and correctness and courtesy of conduct. The ethics of the high-minded physician have been constantly set forth in high relief before your students and colleagues, and your good influence in this regard upon the medical practitioners of this continent is not to be estimated or appraised.

We beg to assure you of our undiminished respect and affection, and we earnestly wish for you many years yet of sound health, well requited labor, and well earned happiness.

Dr. R. B. Nevitt was then called on to present a service of silver, and he spoke as follows:

My confreres have imposed upon me a difficult task. To show why and how much we love you. The difficulty consists in the first place in making a proper selection from the mass of material at my disposal, and in the second place in clothing that material in appropriate words and phrases, so that on the one hand I may not offend your innate modesty by too warm a color, and on the other that I should not incur the censure of my colleagues by

too cold and meagre a diction, for not conveying to you a true conception of the feelings of respect, admiration and affection with which our hearts are overcharged.

Occasions like the present occur with sufficient infrequency to make this event noteworthy. I would that this were otherwise. That your ability as a teacher, which has been long unquestioned; that your skill as an operating surgeon which is undoubted; that you have occupied positions of influence and trust in the two great Medical Schools and in both our universities and in the Council of the profession; your steadfast devotion to duty and truth, your unswerving integrity and your natural, kindly disposition, are abundant reasons for the honor we offer you.

It is now more than forty years since I sat at your feet a disciple, and yet, even at this distance, the outlines of the picture stand out clearly—the deep impression you made upon the students; the manner and the matter of your lectures, which were models of the didactic type, in precision, lucidity and emphatic delivery.

The impressions formed in the class room were strengthened and confirmed on a wider and closer acquaintance in the after time, when we learned to appreciate your integrity and honorable character.

It was a privilege to have you in consultation; to watch your earnest examination; to observe the forcible directness of your questions; to mark the quick apprehension of the difficult points of the case; your judicious summing up, the clear diagnosis and the helpful suggestions, and above all your encouraging demeanor towards both patient and doctor.

In all matters pertaining to the welfare of the profession you took a warm and lively interest, and your opinion was characterized by its common sense, fairness and justice. In social life you were genial and kindly, as in professional you were upright and true. Quick to resent a wrong, you were no less quick to recognize the right. It seems as though you had applied the rules of life as formulated by Guy de Chauliac for himself:

Bold when Sure,
Cautious in Danger,
Kind to the Sick,
Friends with Fellow-workers,
Constant in Duty,
Not greedy of Gain.

And now I beg that you will accept this service of silver which your old pupils and your fellow practitioners desire to present you as tokens of good will towards their teacher, respect for their councillor and affection for their friend. And to mark their appreciation of that happy composition of body and mind which has preserved you cheerful, easy and agreeable through a long life, and endeared you to all, and has rendered you a worthy citizen, an honorable man and an ornament to our profession.

And we hope that the remaining years of your life may be filled with joy, and that old age when it comes will be kind to you.

Dr. Temple was most enthusiastically received as he arose to reply. He spoke in his usual clean-cut, admirable style, and said that he was unable to give expression in words of his high appreciation of the kindness of his friends. He then delivered a short but very appropriate address, in which he gave what might be considered a history of the profession in Toronto during the last forty years.

Dr. James F. W. Ross then proposed the health of the graduates of Trinity University, which was responded to by Dr. Charles Sheard.

Dr. Ryerson then proposed the health of the laymen present. Mr. Edmund Osler replied as follows:

It was with more than ordinary pleasure that I received the invitation to join you to-night in doing honor to Dr. Temple. No man I know better deserves the compliment that you are paying him. The position he has attained means the possession of brain power well applied, hard work, and infinite kindness and sympathy.

Dr. Temple is in a measure retiring, but in many ways he is the youngest man here this evening, and I hope for him many

years of perhaps lessened work but greater fees, and that he may long enjoy the respect and friendship of his fellow professionals and his many friends. There are only two or three of his old patients here to-night, but there are hundreds who would have been delighted to have had the opportunity of joining and bearing testimony to the esteem in which they hold Dr. Temple.

Dr. Temple has been physician and friend to me and mine for over thirty-six years. As a physician year by year my confidence in his skill increased, and my friendship for the man grew stronger.

Notes

THE Editors of the *Interstate Medical Journal*, St. Louis, announce the publication of a symposium number on Syphilis for January.

The list of articles reads as follows: "The Influence of Syphilis on Civilization," Wm. Osler, M.D., Oxford University; "Present Status of the 'Noguchi Test,'" Hidego Noguchi, M.D., New York; "On the Means of Finding the Spirochaeta Palida, with Special Reference to the India Ink Method" (from the Laboratory of the Michael Reese Hospital), J. S. Cohn, M.D., Chicago; "The History and Methods of Application of Ehrlich's Dioxydiamido-arseno-benzol" (from the Royal Institute for Experimental Therapeutics), Lewis Hart Marks, M.D., Frankfort, a/m.; "Recent Progress in the Treatment of Syphilis," H. Hallopeau, M.D., Paris; "Treatment of Syphilis with Ehrlich-Hata '606,'" Abr. L. Wolbarst, M.D., New York; "Syphilis of the Nervous System," Ernest Jones, M.D., Toronto; "Syphilis and Pulmonary Tuberculosis," Robert H. Babcock, M.D., Chicago; "Syphilis as a Cause of Pauperism," A. Ravogli, M.D., Cincinnati; "Giant Cells in Syphilis," John A. Fordyce, M.D., New York; "Personal Observations with the Ehrlich-Hata Remedy '606,'" B. C. Corbus, M.D., Chicago; "Syphilis and the Public," Isadore Dyer, M.D., New Orleans; "Sanitary Regulation of Prostitutes," Prince A. Morrow, M.D., New York.

In addition to the above, there will be four "Collective Abstracts" (critical reviews of recent literature in collective

form) on (1) Ehrlich-Hata "606," (2) the Cerebrospinal Fluid in Syphilis and Parasyphilitic Diseases, (3) Serum Diagnosis of Syphilis, (4) Diagnosis of the Osseous Lesions of Syphilis by the X-Ray.

NEW HOSPITAL FOR NORTH BAY

It gives us much pleasure to announce that the Town of North Bay has now an admirable and well equipped General Hospital. When the T. & N. O. R. R. was being constructed a small cottage hospital was erected in 1902 at a cost of \$800.

In 1903 a hospital was erected with beds for about 20 patients.

In 1908 it was found necessary to enlarge the hospital, and that building was remodeled and steps were taken to erect a new wing. The new hospital was completed a few weeks ago, and was formally opened December 9th. The building as it now stands cost about \$25,000.

Chief Justice Sir Glenholme Falconbridge decided that the new Emergency Hospital should be built on the new General Hospital grounds at the corner of College Street and University Avenue.

Miss Jane Shields left a bequest of \$48,258 to be expended on an Emergency Hospital to be built in or near the centre of Toronto. All the details of the site and management of the new hospital were to be subject to the approval of Dr. N. A. Powell, who favored the College Street site. His Lordship decided that the proposed site is undoubtedly near enough to the centre of Toronto to comply with the terms of the will.

Miss Aileen Louise, third daughter of Dr. Edmund E. King, died of broncho-pneumonia, following whooping cough, December 24th, aged 17.

Obituary

GEORGE FREDERICK EMERY, M.D.

Dr. Emery, of Ottawa, died after a short illness, November 23rd, aged 44.

WILLIAM C. VANBUSKIRK, M.D.

Dr. VanBuskirk, of St. Thomas, died at his late residence December 11th, aged 85. He was born in New Brunswick and went to London when a lad. He received his practical education in that town and then went to New York, graduating M.D. from the University of New York in 1854. Before completing his course in New York he studied for some time in Paris, France. He settled in St. Thomas, and remained there up to the time of his death. In his earlier years he took an active interest in municipal matters, and was at one time Mayor of St. Thomas.

J. HENRY DUNANT

Henry Dunant, born in Geneva in 1828, was in many respects a very remarkable man. Although active in a literary way, he devoted himself chiefly to the work of assisting suffering mankind. He founded in 1864 the Geneva International Congress, under the Presidency of Queen Augusta of Prussia. The Congress adopted the Geneva cross as a sign of neutrality and protection for the medical services in war. Thus started what is well known as the Red Cross Society. He died in a sanatorium in Heiden, Switzerland, October 31st.

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Original Communications

MONSTROUS AND MULTIPLEX BIRTHS

BY JOHN KNOTT, A.M., M.D., CH.D., AND D.P.H. (UNIV. DUB.);
M.R.C.P.I., M.R.I.A., ETC. (DUBLIN, IRELAND).

The original theomorphic molding of "the human form divine" still continues—even in this our highly legalized and mechanically statistical twentieth century—to be occasionally outraged by the occurrence of specimens of monstrous misdevelopment. And historical experience goes to show that monsters, like other curiosities and calamities (celestial and terrestrial), tend to appear in groups. Some of the resulting specimens have been so effectively advertised as to have secured for them a permanent notoriety which continues to retain a proverbial prominence even in the mind's eye of a third and fourth generation. The *Two-headed Nightingale* and the *Siamese Twins* are conspicuous examples. Then the opening years of the present century proved more than usually fertile in the production of highly interesting specimens. The case of the Radica Doodica twins not merely furnished an interesting duplex illustration of one of nature's freaks of developmental perversity, but secured a brilliant and most encouraging triumph in the domain of practical surgery. For the exceptionally favorable anatomical conditions of the union in their case, combined with our present knowledge of aseptic surgical methods and technique, secured the possibility of the successful separation which produced a cosmopolitan thrill of scientific and philanthropic gratification at the time of its achievement. But, unhappily, the cases in which such results can be reasonably hoped for will, pretty surely, continue to prove the rare exceptions—among the (fortunately

small total of) instances of such embryological misdemeanor.

Those mysteriously combined—or compounded—specimens of humanity were regarded, even by the physiologist and the surgeon in the older centuries, with a very distinctly appreciable *quantum* of intellectual respect and spiritual awe. This feeling has necessarily passed through a process of solution, and its manifestations have been hopelessly dissipated by the rapid growth and diffusion of embryological knowledge, which have so very conspicuously characterized the results of progressive research in the domain of natural history during the past few generations, and the capitalization of the same in the present. The interest attached to all such freaks of nature, when the birth of every monster—human or other—was regarded as an “omen” or prophetic manifestation of the impending wrath of Providence, has had the inevitable effect of attaching to the occurrence of monstrous births a prominent proportion of interest—theological and historical, as well as anatomical and physiological. And the hankering after the mysterious and the inexplicable, which has evermore formed so prominent a characteristic of humanity—individually and collectively—did not fail to popularize with conspicuous success the most preposterous explanations of the genesis of prodigies of every type and class. The serial collections of monsters, described in the monumental works of Ulisse Aldrovandi, the “Father of Modern Natural History,” and Ambroise Paré, the “Father of Modern Surgery,” clearly demonstrate the fact that the riotous intellectual ingenuity of mediæval superstition had hardly been “scotch’d,” not to say killed, by the spasmodic enlightenment, which had been diffused, in tidal-wave fashion, from the focal centres of the seismic movements of the renaissance. The last named writer enters, indeed, a protest against the ready reception of popular views in at least one well marked instance (Johnson’s Version, 1634):

“And they are to be reprehended here again, who affirm the cause of numerous births to consist in the variety of the cells of the womb, for they feigned a woman’s womb to have seven cells or partitions, three on the right side for males and three on the left side for females, and one in the midst for Hermaphrodites or Seats, and this untruth had gone so far that there had been some that affirmed every one of these seven cells to have been divided into ten partitions into which the seed dispersed doth bring forth a divers and numerous increase, according to the variety of the cells furnished with the matter of seed; which, though it may seem to have been the opinion of Hippocrates, in his book ‘De

Natura Pueri,' notwithstanding it is repugnant to reason, and to those things which are manifestly apparent to the eyes and senses."

But the sacred number *seven*, which has ever more figured so prominently in matters and opinions mystical, celestial and theological, suggests a possible and even plausible explanation of the adoption of the idea of a seven-celled uterus by the "learned vulgar" of ancient and mediæval times; and, also, for the apparently correlated popular belief in the occasional production of a seven-headed specimen of embryonic humanity. Readers whose interested curiosity may lead them to refer to the colossal encyclopædia of Natural History, of which the materials were collected and compiled by the celebrated Bolognese enthusiast to whom I have already referred, will find an illustration of such a specimen in the folio which bears the title of *Historia Monstrorum*. Then, again, the simultaneous birth of seventy—a number which precisely corresponded to the Hippocratic series of uterine compartments—is not unknown in the annals of puerperal abnormalities. But a far more comprehensive provision was surely necessary in the record case of the development (and live) birth of the phenomenal number of 365! We are informed by the very learned Camerarius of a Countess Mathilde of Henneberg, who was solicited for alms by a desolate widow who held a twin child on either arm. On being spurned with scorn by the proud aristocrat, who was herself then—very obviously—pregnant, the disappointed and insulted mendicant prayed that her ladyship might at next birth product *as many children as there were days in the year!* And her heaven-sent petition was duly honored: on the Friday which preceded the Palm Sunday of the year of grace 1276, the Countess Mathilde was delivered, at the Abbey of Lisdunen, of 365 children, "of the bigness of chickens new-hatch'd," half males and half females—the odd one being a hermaphrodite!! "These were laid in two basins and baptized by Guidon, Suffragan to the Bishop of Utrecht, who named the sons John and the daughters Elizabeth; . . . as soon as they were baptized they all died with their mother." The transmission of the report of this ease, whole and undefiled, to an evidently credulous posterity is, in itself, proof positive that the mediæval imagination had, in this domain as in so very many others, been allowed to run a course far more riotous than was permitted to that of classical antiquity. Of the latter we have a well-stocked arsenal of reliable records of varied fact (real and imaginary) in the inexhaustible pages of the elder Pliny. And,

as often happens in the case of the latter encyclopædic enthusiast, there is here and there discoverable a fairly proportional leavening of historic and scientific truth, enclosed within the concentric capsules of decorative mis-statement and over-embroidered word painting.

As a Roman citizen he could hardly open a paragraph on the subject better than by the sentence: "That women may bring forth three at one birth appears evidently by the example of the three twins Horatii and Curat." And the interesting folklore item of that next following merely prepares the intellectual appetite for the delicious item of geographical embryology which is contained in the terminal clause: "But to go above that number is reputed and commonly spoken to be monstrous, and to portend some mishap: but only in Egypt, where women are more than ordinary fruitful, by drinking of Nilus water, which is supposed to help generation." After this information we are prepared for the corroborative evidence: "Trogus saith, that in Egypt it is an ordinary thing for a woman to have seven at a birth." The credulity of the author, to which Sir Thomas Browne referred with a characteristic geniality of criticism, is well shown in the statement: "Of late years, and no longer since than in the later end of the reign of Aug. Cæsar, at Ostia there was a woman (a Commoner's wife) delivered at one birth of two boys and as many girls, but this was a most prodigious, token, and portended no doubt the famine that ensued soon after." Greece was sometimes favored with such phenomenal visitations: "In Peloponnesus there is found one woman that brought forth at four births twenty children, and the greater part of them all did well and lived." So was Asia Minor, too, for we find that "Pompey the Great, in his theatre which he adorned and beautified with singular ornaments and rare devices of antique work, as well for the admirable subject and argument thereof, as the most curious and exquisite hand, of cunning and skilful artificers, among other images and portraits there set up, represented one *Eutiche*, a Woman of Tralleis, who, after she had in her lifetime borne thirty bodies, her corpse was carried out by twenty of her children to the funeral fire to be burnt, according to the manner of that country."

Then, with regard to the blending or confusion of sexes, we find it written thus: "In old time they were known by the name of Androgyni, and reputed then for prodigious wonders, how sooner now men take delight and pleasure in them." But when the great natural historian of classic antiquity comes to

deal with monsters and "monstrous births." properly so designated, his coloring of facts comes to be far more vividly impressive, as the reader will probably realize in the perusal of the following extract: "As for *Alcippe* she was delivered of an elephant, marie that was a monstrous and prodigious token, and foreshowed some heavy fortune that followed after. Also in the beginning of the Marsians war there was a bondwoman brought forth a serpent. In sum, there be many mis-shapen monsters come that way into the world, of divers and sundry forms. Claudius Cæsar writeth, that in Thessalie there was born a monster called an Hippocentaure, that is, half a man and half a horse, but it died the very same day. And verily after he came to wear the diadem, we ourselves saw the like monster sent unto him out of Egypt, embalmed and preserved in honey. Among many strange examples appearing upon record in chronicles, we read of a child in Sagunt, the same year that it was forced and raised by *Anabal*, which so soon as it was come forth of the mother's womb presently returned to it again."

Then the facts which are cited in illustration of transmutation of the sex of the individual display an imagination of corresponding originality and creative power. For we are assured by the same encyclopædic authority that: "It is no lie nor fable that females may turn to be males; for we have found it recorded that in the yearly Chronicles called Annals, in the year when *Publius Licinius Crassus* and *C. Cassius Longinus* were Consuls, there was in Cassinum a maid child, under the very hand and tuition of her parents, without suspicion of being a changling became a boy, and by an ordinance of the Saithsayers, called Aruspices, was confined to a certain desert island and thither conveyed. *Licinius Mutianus* reporteth, that he himself saw at Argos one named *Arescon*, who before time had to name *Arescusa*, and a married wife, but afterwards, in process of time, came to have a beard and the general parts testifying a man, and thereupon wedded a wife. Likewise (as he saith) he saw at Smyrna a boy changed into a girl. I myself am an eye witness, that in Africa one *L. Cossiciuc*, a citizen of Fisdrita, turned from a woman to be a man upon the very marriage day, who lived at the time I wrote this book. Moreover, it is observed that if women bring twins, it is great good hap if they all live, but either the mother dieth in childbirth, or one of the babes, if not both. But if it fortune that the twinnes be of both sexes, the one male, the other female, it is ten to one if they both escape. Moreover this is well knowne, that as women age sooner than men, and

seeme old, so they grow to their maturitie more timely than men, and are apt from procreation before them. Last of all, when a woman goeth with childe, if it bee a man childe, it stirreth oftner in the wombe, and lieth commonly more to the right side: whereas the female moveth more seldom, and beareth to the left."

When he comes to discuss "many infants at one birth," the great natural historian does not fail to prove correspondingly entertaining. It will also interest the reader to note that he is fully cognizant of the importance of bearing in mind the occasional occurrence of the peculiar generative phenomena of superfecundation and superfetation, the unlocking of the mystery of which seems to be regarded by some fairly recent writers as a quite "modern" achievement. Indeed, subsequent clinical observation—in each of these abnormal departments of generation—can hardly be said to have added very much to the following:

"Few creatures there be besides women, that seeke after the male, and can skill of their companie after they be once conceived with yong: one kind verily or two at the most there is knowne to conceive double one upon the other. We find in books written by physitians, and in their records who have studied such matters, and gathered observations, that there have passed or bin cast away from a woman at one only slip, twelve distinct children: but when it falleth out that there is some pretty time betwixt two conceptions, both of them may tarry their full time, and be borne with life, as appeared in *Hercules* and his brother *Ipticus*; as also in that harlot who was delivered of two infants, one like her owne husband, the other resembling the Adulterer: likewise in a Proconnesian bond-servant, who was in one day gotten with childe by her master, and also by his Bailly or Procurator; and being afterwards delivered of two children, they bewrayed plainly who were their fathers."

[The American physician here readily recalls the record, in the generations of negro slavery, and the associated conditions of life among "the cotton and the cane," of occasional twin births of typical representatives of the negro and the "pale face"—resulting from the unavoidable submission of the helpless African mother to the will of her brutal owner, directly after her husband had left her in the morning to proceed to his usual daily labors.] Moreover, there was another who went her full time, even nine moneths for one childe, but was delivered of another at the five moneths end. Furthermore in another, who having dropped downe one childe at the end of seven moneths, by the end of the ninth came with two twinnes more. Over and besides it is com-

monly seen, that children be not always answerable to the parents in every respect: for of perfect fathers and mothers who have all their limbs, there are begotten children unperfect and wanting some members: and contrariwise, parents there are maimed and defective in some part, who nevertheless beget children that are sound and entire, and with all that they should have. It is seen also, that infants are at a default of those parts their parents misse: yea and they carry often times certain marks, moles, blemishes and scars of their fathers and mothers, as like as may be. Among the people called Dukes the children usually beare the marks imprinted in their armes, of them from whom they descend, even to the fourth generation."

But of the variety of monstrous and of multiplex births there was no end—or but a very remote and utterly undefinable one—as every reader who has even superficially dipped in the abyss of its literature well knows. So much so, indeed, that a large folio volume would not exhaust—or even summarize—the available material which has been collected and capitalized by the industry, and credulity, of the successive centuries. So that we must, while working within journalistic limits, rest satisfied—or, at least, confine ourselves to a relatively small series of the more interesting, or more typical, of the freaks of nature, and the conclusions which may be legitimately derived from the occurrence of the same. The *why* and the *wherefore* have always been a puzzle to the physiological anatomist, as well as to the inquiring philosopher, and still contain adamantine kernels of unanalyzed fact.

Modern science, of course, waives aside all claims of the supernatural in the arrangement of such happenings. The success which has, during the past half century, attended its efforts to unlock so many of nature's most mystical caskets is assuredly very encouraging—at least to the ordinary observer. Still the dispassionate critic who has made himself acquainted with the data hitherto obtained and collected, and is also possessed of the intellectual capacity and logical skill requisite to the formation of a reliable opinion on questions arising from conditions so complicated, will not fail to recognize that the kernel of mystery still remains there, although so vast a number of its concentrically investing capsules have been removed in due succession. It will be admitted too, I believe, by the philosophic expert, that the conclusion which was arrived at in the days of the most rampant diffusion of the Darwinian gospel—by some of the most perceptive, as well as appreciative, of its enthusiastic

disciples—that the formation of monstrosities and monsters represented nothing supernatural, was by no means one of the most absurd of the deductive excrescences of their teaching. For, as we were assured, all such organic deviations merely represented products which developed under the ordinary laws of (“that blessed word”) *evolution*, and in conformity with laws which were sometimes distinctly recognizable. What could be more strictly in accordance with the theory and practice of scientific and *creative evolution* (!) than the intervention of a potent disturbing cause at a given moment—whether in the primordial formation or arrangements of the elements (or molecular constituents) of the spermatozoon or ovum, or in the course of the progressive development of the being which had been predestined to “proceed” from their mutual interaction.

Still, if the plain, unvarnished truth—“and nothing but the truth”—must now be told, it will be found necessary to admit that the laws of the *why* and the *wherefore* of such original disturbances of the ordinary orbital phenomena, which provide for the continuous preservation of species, still remain invested by the original cloak of mystery. The immortal Stagirite himself defined monsters as *errors of nature*—and we cannot precisely point out how far he was wrong, or in what direction. The etymology of the word *monstrum* tells a story which is both interesting and instructive as that of many such venerable words do. For the original term *monstrum* is directly derived from *monere*, to warn or advise: *quod moneat voluntatem deorum*, says Festus. Or—it will be remembered by all skilled readers that typical etymological experts differ as frequently, and almost as widely, as the proverbial medical ones—it came, as was thought by one of the most diligent and enthusiastic students of the subject, Fortunius Licetus, à *monstrando*, because the objects of such inexplicable influence excited the curiosity of all contemporaries, so that each was always enquired after by, and very often *exhibited* to, the public, as something very extraordinary. And it must be admitted that the sense which is attributed to the term by the average man in the street generally approximates that which coincides with the latter view. The indefatigable Pliny tells his curiously attentive reader to: “See how nature is disposed for the nones to devise full wittily in this and such like pastimes to play with mankind, thereby not only to make herself merry, but to set us a wondring at such strange miracles. And I assure you, thus dayly and hourely in a manner playeth she her part, that to recount every one of her sports by themselves, no

man is able with all his wit and memory." Still the enthusiastic founder of the modern science of *teratology*, Geoffrey St. Hilaire, was led, as the net result of the unprecedented range of his original and second-hand information regarding the facts and phenomena therewith associated, to formulate the opinion that: *les monstres eux-mêmes n'échappent pas aux lois générales de l'organisation; ils en subissent l'empire et en prouvent l'universalité*. The general law of the heredity of organic characters and features has hardly been comprehensively enunciated by any of its teachers or advocates than by the great Father of Medicine himself (as construed by Foes): "*Cum nempe genitura ab omnibus corporis partibus procedat, à sanis sana, et à morborum morbos.*" These words can be made a fruitful text, even at the present day, by any advocate of any one of the decidedly discordant theories—and reported *facts* (!)—of heredity and evolution in organic life which continue to cloud the cosmic atmosphere of our twentieth century and to spoil the harmony of its spherical music. For even in presence of all the dazzling results of the enthusiastic industry displayed in all departments of natural history research which was so effectively evoked by the promulgation of the evolutionary hypothesis of Creation: in presence of the seven leagued pace of progress and conquest of physical and chemical research; of its physical familiarity with germinal layers, its "ultramicroscopical" knowledge of karyokinesis and of chromosomes and its quasi-metaphysical conceptions of *germ-plasm*, of *ids* and of *determinants*—it must be candidly, however sorrowfully, admitted by "the earnest" soul of the genuine truth-seeker who has studied the position, that the ultimate, primordial or central cause of the origin of such divagations from the beaten pathway of Nature's routine process of production is (in the great majority of the most interesting cases) a riddle which still awaits its *Cedipus*. So that I propose to leave the attempted solution, at least for the present, to the progressive attacks of the specialists; and endeavor to content myself and (if possible) entertain the reader by the presentation of a few selected items of legendary lore and gradually progressive opinion on a subject which has evermore been interesting—often very painfully, as well as profoundly so—to the parties most intimately concerned—and is more than likely to continue so to be for evermore. The elder Pliny is here, as would be anticipated by the initiated, as interesting as he is encyclopædic, and as picturesque as he is (very obviously) credulous. And he loses none of those exquisite

qualities in his passage through the linguistic filter of Philemon Holland, *Doctor of Physicke*, through the intellectual medium of which our faith is strengthened—somewhat—by being asked (in way of preliminary “suggestion”): “And verily who ever believed that the Æthiopians had bin so blacke, before he saw them with his eies: nay what is it, I pray you, that seemeth not a wonder at the first sight? How many things are judged impossible before they are seene done and effected. And certes, to speake a truth, the power and majestie of Nature, in every particular action of hers & small things, seemeth incredible, in a man, consider the same severally, and enter not into a generall conceit of her wholly as she is.” This constitutes an appropriate foreword, surely, to such paragraphs as those which discuss the ethnology of the region “toward the pole Articke, and not far from that climate which is under the very rising of the North-east wind, and about that famous cave or whole out of which that wind is said to issue, which place they call Gesclithron [*i.* the cloister or key of the earth], the Arimaspians by report do dwell, who as we have said before, are known by this marke, for having one eie only in the mids of their forehead: and these maintain war ordinarily about the mettall mines of gold, especially with griffons, a kind of wilde beasts that flie, and use to fetch gold out of the veines of those mines (as commonly it is received:) which savage beasts . . . strive as eagerly to keepe and hold those golden mines, as the Arimaspians to disseize them therof, and to get away the gold from them. Above those, are other Scythians called Anthropaphagi, where is a countrie named Abarimon, within a certain vaile of the mountain Imaus, wherein are found sauage & wild men, living and conversing usually among the bruit beasts, who haue their feet growing backward, and turned behind the calues of their legs, howbeit they run most swiftly.” And on returning from the inhospitable vicinity of the Boreal Pole (the heart of whose perennial mystery has been so recently—so bravely, so devotedly, and so nobly (!)—plucked out at last by one of the sons of whom America can best afford to be proud), we are treated to a specimen of teratological information which, although less startling in the originality of its poetic invention and portraiture, is quite as curiously instructive as a specimen illustration of the possibilities of confusion of ideas derivable from, or inspired by, unnoticed *fallacy of equivocation*—of which so many effective specimens still continue to float in our literary and intellectual atmospheres. I refer to the quoted testimony of “Isogonus the Nicean”—to the effect: “That in

Albanie there be a sort of people borne with eies like owles, whereof the sight is fire red: who from their childhood are grey headed, and can see better by night than day." (Very obviously: *albus*—"Albanie"—*Albino*—accounts for the confusion of fact and fancy.) And, if we "persist to read," we find ourselves in African territory, and, after being introduced to some interesting tribal customs and morals, we learn that: "Beyond those Nasamones, and their neighbours confining vpon them (the Machlyes) there be found ordinarily Herimaphrodites, called Androgyni, of a double nature, and resembling both sexes, male and female, who haue carnal knowledge one of another interchangeably by turns, as *Calliphanes* reports. *Aristotle* saith moreover, that on the right side of their breasts they haue a little teat or nipple like a man, but on the left they haue a full pap or dug like a woman." Furthermore, as might well be guessed of the mysterious inhabitants of the "Dark Continent," there were "sorcerers: who if they chance to bless, praise, and speak good words, bewitch presently withall: insomuch as sheepe therewith die, trees wither, and infants pine and winder away." And "*Isognus* adds furthermore, that such like there be among the Triballians and Illyrians, who with their very eiesight can witch, yea and kil those whom they look wistly vpon any long time, especially if they be angred, and that their eyes bewray their anger: and more subject to this daunger be men growne, than children vnder fourteene years of age. This also in them more notable and to be obserued, that in either eie they haue two sights or apples. Of this kind and property, as *Apollonides* mine author saith, there be certain women in Scythia named Bithyca. *Philarcteus* witnesseth, that in Pontus also the whole race of the Thibians, and many others besides, haue the same quality, & doe the like: and known they are (saith he) by these markes. In one of their eies they haue two sights, in the other the print or resemblance of an horse." And the authority attached to those statements is fortified to the highest attainable degree by the testimony of "Rome's least mortal mind." For we are reminded that "*Cicero* a Romane writer here among vs testifieth, that generally all women that haue such double apples in their eies, haue a venemous sight and doe hurt therewith." And the inevitable moral—of the usual tone, too, of course—indicates, with a view to the moral and philosophic instruction of the reader: "See how nature hauing engrafted naturally in some men this vnkind appetite (like wild beasts) to feed commonly vpon the bowels and flesh of men, hath taken delight also & pleasure to

giue them inbred poisons in their whole body, yea & venom in the very eies of some; that there should be no naughtinesse in the world againe, but the same might be found in man." And with regard to the localities specially by Nature—or decorated by creative invention—with specimens of physical humanity of so anarchic type of growth and development, we learn: "But principally aboue all other countries, India and the whole tract of Æthiopia is full of these strange and miraculous things." Among the peculiarities of man and beast in those days of geographical originality and home-made natural history was, of course, the extraordinary stature of the more specialized products; and, as the reader may have already remarked to himself, the recent—appreciative and prolonged—visit of Mr. Roosevelt to the latter country has, even by itself, furnished satisfactory proof that the natural historians of antiquity were not always engaged in misrepresentation of its quadrupedal gigantism. The traditional representations of the Indian varieties of *homo sapiens* displayed a much greater licence of creative fancy, for we learn that:

"There are to be seene many men there aboue five cubits tall: neuer are they known once to spit; troubled they are not with pain in the head, tooth-ach, or griefe of the eies; and seldom or neuer complaine they of any sorance in other parts of the body, so hardy are they, and of so strong a constitution thorough the moderat heat of the Sun. Ouer and besides, among the Indians be certain Philosophers, whom they call Gymnosophists, who from the Sun rising to the setting thereof are able to endure all the day long, looking full against the Sunne, without winking or once mouin their eies: & from morning to night can abide to stand somtimes vpon one leg, and sometimes on the other in the sand, as scalding hot as it is. Vpon a certaine mountaine named Milus, there be men whose feet grow the tother way backward, and of either foot they haue eight toes, as *Megasthenes* doth report. And in many other hills of that country, there is a kind of men with heads like dogs, clad all ouer with skins of wild beasts, who in lieu of speech vse to bark: armed they are and well appointed with sharp and trenchant nailes; they live upon the prey which they get by chasing wild beasts, and fowling. *Ctesias* writes that there were discovered and knowne of them aboue 120,000 in number. By whose report also, in a certaine country of India the women beare but once in their life, and their infants presently waxe grey so soone as they are borne into the world. Also, that there is a kind of people named Monoscelli,

that have but one leg apeece, but they are most nimble, and hop wondrous swiftly. The same men are also called Sciopodes, for that in hottest season of the Summer, they ly along on their back, and defend themselues with their feet against the Suns heate: and these people as he saith are not farre from the Troglodites. Againe, beyond these westward, some there be without heads standing vpon their necks, who carry eies in their shoulders. Among the westerne mountains of India the Satyres haunt. (the country wherein they be is called the region of the Cartaduli) creatures of all other most swift in footmanship: which one whiles run with all foure; otherwhiles vpon two feet only like men: but so light footed they are, that vnlesse they be very old and sick, they can neuer be taken. *Tauron* writeth. That the Choromandæ are a sauage and wild people: distinct voice and speech they haue none, but instead thereof, they keep an horrible gnashing and hideous noise: rough they are and hairy all ouer their bodies, eies they haue red like the houlets, and toothed they be like dogs. *Eudoxus* saith. That in the Southern parts of India, the men kind have feet a cubit long, but the women so short & smal, that thereupon they be called Struthopodes, i., sparrow footed. *Megasthenes* is my author, that among the Indian Nomades there is a kind of people, that in stead of noses have only two smal holes, and after the manner of snakes they have their legs and feet limmer, wherewith they crawle and creep, and named they are Syrietae. In the utmost marches of India, eastward, about the source and head of the river Ganges, there is a nation called the Astomes, for that they have no mouths: all hairy over the whole body, yet clothed with soft cotton and down that come from the leaves of trees: they live only by the aire, and smelling to sweet odors, which they draw in at their nostrhills: no meat nor drinke they take, only pleasant savours from diuers and sundry roots, floures, and wild fruits growing in the woods they entertaine: and those they use to carry about with them when they take any farre journey, because they would not misse their smelling. And yet if the sent be any thing strong and stinking, they are soone therewith overcome, & dy withal. Higher in the country, and above these, even in the edge and skirts of the mountains, the Pygmaei Spythamaei are reported to be: called they are so, for that they are but a cubit or three shaftments (or spannes high, that is to say, three times nine inches.) The clime wherein they dwel is very wholesome, the aire healthy, and ever like to the temperature of the Spring: by reason that the

mountains are on the North side of them, & beare off all cold blasts. And these prety people *Homer* also hath reported to be much troubled & anoyed by cranes. The speech goeth, that in the Spring time they set out all of them in battell array, mounted upon the backe of rammes and goats, armed with bowes and arrows, and so downe to the sea side they march, where they make foule worke among the egges & yong cranelings newly hatched, which they destroy without all pitty. Thus for three month this their journey and expedition continueth, and then they make an end of their valiant service: for otherwise if they should continue any longer, they were never able to withstand the new flights of this foule, growne to some strength and bignesse. As for their houses and cottages, they are made of clay or mud, fowls feathers, and birds egge shels. Howbeit, *Aristotle* writes, That these Pygmæans live in hollow caves & holes under the ground. For all other matters he reports the same that all the rest."

Startling enough, in the revelations conveyed to the uninitiated and confiding, must the first perusal of these sentences inevitably prove. But even the ascent to the cavernous mountains which were patronized and decorated by the pygmy race has not exhausted the possibilities of the teratological ethnology of that wondrous Oriental peninsula. For on proceeding a little further we learn:

"*Duris* maketh report, that certaine Indians ingender with beasts, of which generation are bred certaine monstrous mungrels halfe beasts and halfe men. Also, that the Catingian women of India conceive with childe at five years of age, and live not aboue eight. In another tract of that country there be certaine men with long shagged tails, most swift and light of foot: and some againe that with their eares cover the whole body. The Orites are neighbours to the Indians, divided onely from them by the river Arbis, who are acquainted with no other meate but fish, which they split and slice into peeces with their nailes, and rost them against the Sun, and then make bread thereof as *Clitarchus* reporteth. *Crates* of Pergamus saith likewise, that the Troglodites aboue *Ethiopia* be swifter than horses: and that some *Æthiopians* are aboue eight cubites high: and these are a kind of *Ethiopian Nomades*, called *Syrbotæ*, as he saith, dwelling along the riuer *Astapus* toward the North pole. As for the nation called *Menismini*, they dwel from the Ocean sea twenty dayes journey, who live of the milke of certaine beasts that we cal *Cynocephales*, having heads and snouts like dogs. And whole

heards and flocks of the females they keepe and feed, killing the male of them all, save only to serve for maintenance of the breed. In the desarts of Africke ye shall meet oftentimes with Fairies, appearing in the shape of men and women, but they vanish soone away like fantastick delusions. See how Nature is disposed for the nones to devise full wittily in this and such like pastimes to play with mankinde, thereby not only to make herself merry, but to set us a wondring at such strange miracles. And I assure you, thus dayly and hourelly in a manner playeth she her part. that to recount every one of her sports by themselves, no man is able with all his wit and memory."

As a patriotic Connachtman, I feel it to be a duty to indicate some of the folklore divagations from the (obscurely) rectilinear pathways of (scientific) teratology. I am less bashful in doing so than I felt disposed to feel before taking a backward glance at the prominent landmarks of opinion which have been erected along the tortuous line of progress of this subject—and by the hands, and accordingly bearing the names, of some of the most devoted and deservedly distinguished of the militant pioneers of the healing art and of the various sciences on which the theory and practice of the same have been so laboriously founded. For I find that the "Father of Modern Surgery" enunciated the view which is approximately identical with that of the illiterate wise woman of the Western Irish province in my boyish days: "*Monstres sont choses qui appairissent contre le cours de la nature (et sont le plus souvent signes de quelque malheur à advenir) comme un enfant qui naît avec un seul bras, un autre qui aura deux têtes.*" The deservedly famous physician, William Harvey, who was so appropriately predestined by fate to function as the medical adviser of the still more celebrated—notorious—Francis Bacon, the "Founder of Experimental Science," became immortalized, as all readers know, by the promulgation of the great fact of the circulation of the blood, his so-called (or mis-called) *discovery*. His idéas of generation, which were also imported from Padua, the "nursery of arts" of that period, also led to the promulgation of the view that the occurrence of human monstrosity was due to arrest of normal development. For he recognized that the higher animal types have to pass through grades of development which are more complex in proportion to the elevation of their ultimate position in terrestrial life. "*Sic natura perfecta et divina nihil faciens frustra nec cuiquam animate cor addidit, ubi non erat opus, neque priusquam esset ejus usus, fecit; sed iisdem gradibus in formatione cujuscunque ani-*

malis, transiens per omnium animalium constitutiones (ufita dicam) ovum, vermem, fœtum, perfectionem in singulis acquirit. In fœtus formatione, multis observationibus hæc alibi confirmanda sunt."

This short extract may, I would suggest, be regarded by the accomplished critic, who is well equipped with the findings of science and the methods of logic, as sufficient proof that the Darwin-Haeckel concept of progressive evolutionary creation was by no means so very original as so many of its gaping disciples tried to make it out to be. It contains the germ of Harvey's theory of monstrosity in the human fœtus: *arrest of development*. This was applied, and with epoch making success, to the production of *hare lip*. But the uneducated Irish peasant knew better: the genesis of the abnormality was due to the sight of a hare suddenly crossing her path during pregnancy—especially after the period of quickening had passed. And being (as a necessary feature of her Celtic temperament) an absolute believer in the efficiency vicarious sacrifice and appropriate peace offering to the unseen powers, she knew that the proper way to prevent the appearance of the unwelcome *labium leporinum*, was to tear a vertical slit in the nether border of her petticoat when a hare was sighted. This action transferred the influence the impression to a locality in which it could be borne without very special deterioration. By corresponding *maternal impression* was explained the formation of "*mother's mark*" (*nævus*)—which was simply a crude cutaneous reproduction (or image) of some object with which the pregnant mother had been struck. The first part of the mother's body touched by the (her own) hand after the contact of the missive (strawberry or other fruit; red flannel or other rag or patch) was that which always produced the undesirable image. Hence the frequency of its appearance on the face—the part of the body with which the hand is most frequently brought into contact,—especially in the absent-minded and those prone to movements characteristic of our sensitive reflex. But the multipara of multiplex experience swiftly conveyed her hand to the gluteal region after such roughly-impressive contacts—and thus secured the development of such deforming decorations on the part of the cutaneous area on which they could best be borne, and where "marks" were not meant to be presented to the inspection of idle curiosity.

Of course, the bordering line of demarcation between mere *deformity* (or modification) of a portion of the individual and what could be justly indicated as *monstrosity* was not always,

and everywhere, clearly definable. One of the most progressively industrious and devoted, and (in many directions, at least) one of the most inspired of physiologists was Albrecht Haller. And his idea of the connotation of the term *monster* is thus enunciated: *Monstri vox, ex ipsa linguæ natura videtur aberrationem animalis a consueta suæ speciei fabrica adeo evidentem, ut etiam ignarorum feriat.* A view which is further expounded by the following: *Nobis vis vocis perinde videtur indicare fabricam etiam grandium et conspicuarum partium, alienam a solita. Neque enim, quæ in nervis, in vasis, in musculis, in ossibus varietates dicitur, eas vellem monstra dicere, et difficillimum foret, si omnino subtilitates sequi vellemus, limites definire, quibus consueta et naturalis fabrica definiretur.* And the most famous anatomist of the closing decades of the eighteenth century, Friedrich Blumenbach, enunciated the hypothesis that the “*nisus formations*” was the blamable influence in the production of monsters—having followed a direction, not only foreign to the routine which guided the normal specimens, but wholly contrary to nature. And I propose to conclude this communication with the definition suggested by the illustrious “*Founder of Modern Teratology*”: “*La monstruosité est une anomalie très-grave, rendant difficile ou impossible l’accomplissement d’une ou de plusieurs fonctions, ou produisant chez les individus, qui en sont affectés, une conformation vicieuse, très-différente de celle que présente ordinairement leur espèce*”—with the full consciousness that, as the last—even the ante-penultimate—word has not yet been said on this curious subject has a chance of securing a kingdom and immortality by solving the too sphinx-like problem.

THE USE OF SCARLET RED IN THE TREATMENT OF ULCER*

E. STANLEY RYERSON, M.D., C.M.,

Demonstrator in Surgery, University of Toronto; Junior Surgeon, Toronto General Hospital and Hospital for Sick Children.

When an ulcer becomes aseptic, has a clean granulating base and healing edges, anything that will tend to reduce the time required for the epithelium to grow and cover the surface will be gratefully appreciated by the profession. In many cases of large ulcers and extensive burns skin grafting has to be resorted to. In the class of cases in which one hesitates to submit the patient to an anæsthetic and a skin grafting operation, the period of healing may be very materially shortened by the application to the edges of the area of an ointment of vaseline containing 8% of Scarlet Red.

Scarlet Red is an aniline dye, which was discovered in 1882. It is a sodium salt derivative of disulphonic acid, costing sixty-five cents a pound, or about ten cents an ounce. It is made up into an ointment with a vaseline base, the strength varying from 2% to 20%, usually 8%. In its preparation the Scarlet Red powder should be rubbed up first with a little olive or castor oil before being mixed with the base. Instead of vaseline, boracic, zinc or any other bland ointment may be used for the base. Sterilization causes the ointment to become darker in color.

Technique.—The ulcer should be washed with a solution of boracic acid or any other mild antiseptic and the edges dried. Solutions of bichloride of mercury or carbolic acid are to be avoided, as they kill the new young epithelial cells.

The Scarlet Red ointment is then applied to the edges of the ulcer, either on perforated old linen or with a camel's hair brush. In large ulcers the surrounding skin is liable to become irritated from repeated applications, so it is well to cover this with some boracic or zinc ointment to within 1 cm. of the edge. In small ulcers the Scarlet Red ointment is applied to the whole base and edges.

This dressing is left on for twenty-four hours, when the area is again washed and a boracic ointment (quarter strength) dressing applied. The Scarlet Red is used again at the end of another day, and so on alternately. It has been found that the continuous application of the Scarlet Red ointment is too irritating.

Theory.—Fischer of Bonn published a paper in 1906 on "Ex-

*Read before the Paediatric Section, Academy of Medicine, Toronto.

perimental Generation of Atypical Epithelial Proliferations." He found that he could produce increased mitosis in the germinal layer of the skin, in the hair follicles and the glands by injections of Scarlet Red in olive oil. His findings were corroborated by Helmholtz and Werner. Scarlet Red was used first therapeutically in 1908 by v. Schnieder, and since then has been given many tests in Germany. In Dr. Davis' paper sixty cases are reported in which the results were gratifying. In this list are included cases of skin grafting, burns, ulcers, simple, varicose and specific, and bed-sores.

Among many patients who have come under my observation at the Toronto General Hospital and Hospital for Sick Children, I might mention a few as examples of the types of cases in which I have found Scarlet Red ointment satisfactory. Indolent ulcers over the tibia, either traumatic, varicose or syphilitic, respond rapidly. Large granulating wounds resulting from injury, in which the sloughs have separated and the base is clean and aseptic, are especially well suited to this treatment. Burns, when they have cleaned up and are healing, also do well under it.

Just in passing I might state that I have found that ulcers, burns and infected wounds clean up more rapidly by applying compresses of aluminium acetate (1%) solution than those of boracic, bichloride or other antiseptic solutions.

In conclusion, I have no hesitation in saying that Scarlet Red ointment materially shortens the healing period of ulcers, burns and granulating wounds. No bad effects are encountered if ordinary care is taken not to apply it too often or too strongly.

REFERENCE:

Davis, John S., *Annals Surgery*, Jan., 1910.

MEDICAL THOUGHTS, FACTS AND FOIBLES

BY JAMES S. SPRAGUE, M.D., PERTH, ONT.

We most assuredly have as a profession those who may, without any reservation, be termed our open enemies, and such opponents to our progress and our good names are not wholly included in the list of those who are not of our profession, but, very unfortunately, there exists a list of malcontents and irreconcilables whose names appear as our fellow-licentiates.

Having failed in one or more attempts to occupy the seats of the mighty, through lack of appreciation of his ability by the civic or national authorities, or by other influences too numerous to name, our brother either unfolds his grievances in an article or paper for our medical journals, or, foregoing this, publicly lets his newspaper have the original copy or gives to the public press that which appeared originally in one or more of our journals as his invective.

To any good citizen, whether medical or otherwise, such vehement outbursts of literature appear more defamatory to the author than to the cause or interest which he so ruthlessly assails; and, most unfortunately, in the minds of men with unsettled or confirmed and erratic views distrusts arise which injure the profession and pave the way for public censure and distrust, for the growth of baseless medical cults, in fact for all those conditions which demoralize our vocation—a profession whose work for the public is evident to any observer and recognized as unequalled—whose support, encouragement and honored recognition are an evidence of the highest appreciation. However, to many drones in medicine there appears an established belief in the necessity of doing nothing or writing nothing; in fact, in being nothing—unless for purely selfish interests—when we need so much support, encouraging words, enlightenment and all that can be suggested to ennoble ourselves, and, far better, to become the ideal practitioner.

Those who do nothing for the general benefit of our profession are in the majority, and those constituting the minority are in their altruistic, yet pleasing labors preserving the ancient piety and integrity of medicine, which the master minds and fathers faithfully toiled to preserve, whose inspiring and lofty ideals reward the scholar in his researches with words as “luculent syrups tinct with cinnamon” and as “sweet food of sweetly uttered knowledge.”

The public press, as stated, is decidedly most unworthy as a medium in which to air one's private grievances, especially when understood as medical, but as we have no bishop, national or provincial, to whom we can look for criticism, it would be advisable and conducive to our profession's respect that some instructions should be given these weak and not wise licentiates by means of ethical rulings, announced by and in the name of our Provincial Examining Boards, for it is not advisable that any intransigent brother (if he is worthy of this recognition) should disgrace us and the adypta of our temples by his banal and scincoïd publications, for we have, as any other honored vocation, a sufficient number of opponents, named as medical cults, without encouraging, countenancing or enlisting recruits from our own ranks, even if there are those who know not the principia of aretalogy.

Ne obliviscaris (dinna forget), brother, this fact, that when this fever to write—this *furor aut cacoethes scribendi*, in an evil hour possesses you, remember, as a rule, although you may satisfy your petty grievance or irritation, that the M.D.'s who read your invectives feel in no sense honored, rather dishonored, and the dear people wonder "how such men as you ever got the license: if so, does the profession allow such work?" Brother, we, young or old in practice, would prefer your views and experience, if recorded in our journals, for it is possible for you to tell us something that is either new or profitable, as you know, or should know, that all is not in the dust of the ages or of the schools, and even possible it is for you—as other learned men are doing and have done—to re-arrange some of the masters' sayings—even if in so doing you demolish sentences, you can console yourself with these words of Donatus, who tells us: "*Parcant qui ante nos nostra dixerunt.*" which, as you have forgotten your Latin, I translate: "To hell those who have said our best sayings before us."

In brief, if you follow the examples exemplified by our master minds you will find our own medical publications a better receptacle for your irritative moods or encouraging words.

Let this line be before you—it is by Phaedrus—and it will free you from many silly notions when tempted to write unwisely:

Equidem omni cura morem scrvabo SENIS.

Is there one among us who prides or takes pride in the fact that he is an alumnus of one of the several medical colleges of our Canadian universities, and yet is so indifferent to the report of Mr. Flexner, as published in "The Carnegie Foundation for the

Advancement of Teaching"—"Medical Education in the United States and Canada"—as to allow his *college* to be thus assailed?

Why not this "Report" be carefully weighed by authority of the Medical Councils (separately) of our provinces—and their licentiates be made conversant with this publication—the work of investigation by Mr. Flexner—and, no doubt, by the authority of the Laird of Skibo Castle? We do not want our medical colleges, modelled after those of Great Britain and Ireland, thus traduced, and even if gifts are in waiting it is not—assuredly not—becoming us as honorable men and equally honorable M.D.'s to maintain silence, thereby assuring the truth of the Flexner investigation—a Sir Oracle "Report" as it is—that we for "a few dollars" can quietly rest when all but a few of our old medical colleges, integrally connected with universities, truly and honestly named and well endowed, are thus, without necessity, termed as unworthy?

If you, brother, want to write, this "Foundation" Report is a grand subject; if not this, there are other very interesting subjects, of which *osteopathy* is one, which, if you are indifferent, will be legalized at an early date. If you do not want to write, talk with your M.P. about osteopathy and other mad-cap and medical cults—baseless as dreams. Thus you will be useful to the community, to the medical profession, and to all good interests which are interesting all honest men and patriots.

Selected Articles

VINCENT'S ANGINA

Vincent's angina is a faucial lesion, usually unilateral, characterized by deep ulceration of the tonsil and adjacent structures, a peculiar fœtor, and enlargement of the corresponding lymph glands. Etiologically, it is associated with the symbiosis in the local lesion of two organisms—a fusiform bacillus and a spirillum, described by Vincent in 1896. Similar organisms have been found in cases of hospital gangrene.

DIAGNOSIS.

The importance of the condition lies in the fact that it may be mistaken for diphtheria, syphilis, or for malignant ulceration of the tonsil. It is diagnosed by the detection of the bacillus fusiformis and the spirillum together in films prepared from swabbing in the same way as in the immediate detection of diphtheria. Dr. J. D. Rolleston has written a capital article upon the subject in the Annual Report of the Metropolitan Asylums Board for 1909; and although he allows that it is very much rarer than is diphtheria, he points out that since he first became familiar with this form of sore throat he realizes that he had previously seen several cases which, on retrospection, were probably examples of this condition, but which he had not learned to recognize as such. Many other observers have doubtless had a similar experience. From statistics based upon cases sent to isolation hospitals as diphtheria it is certain that Vincent's angina constitutes at least 0.5 per cent. of all forms of sore throat and 3.1 per cent. of cases of non-diphtheritic angina. These figures probably underestimate its real frequency. The more carefully it is sought for, the more often is it found to be the correct diagnosis in cases of sore throat that may at first be regarded as of some other kind.

It is far more common in children than in adults; males and females are affected in equal proportions.

CONTAGIOUSNESS.

The disease is not very contagious, at any rate amongst adults. During five years of careful observation upon this point at the Grove Hospital, none of the staff contracted the disease,

though they were subject to various forms of sore throat, including 196 cases of follicular tonsillitis and nineteen of quinsy; whilst their susceptibility to infection was further shown by the fact that forty developed scarlet fever and thirty-seven diphtheria during the five years. Nevertheless, Vincent's angina, as might be expected from its bacteriology, is catching. Small epidemics have been reported, especially in children's homes. The disease has been conveyed by kissing, or by the use of an infected pipe or glass, as Vincent himself showed. A dentist has been infected by his patient, and *vice versa*. Family epidemics, in which father, mother, and children were all affected, are on record. Buhlig describes an outbreak amongst medical students who used a tobacco-pouch in common, the string of which they fastened with their teeth. Todd states that a pathologist caught the disease himself after examining throats during an epidemic of Vincent's angina in a lunatic asylum.

ORAL SEPSIS.

Some writers have laid special stress on general ill-health and oral sepsis as predisposing causes, but others find the disease equally frequent amongst those who have previously been perfectly well. Carious teeth are present in most cases, but not to a greater extent than in most children of the hospital class, upon whom statistics are mainly based.

There is no particular seasonal incidence, unless perhaps that the disease is a little more prevalent in the warmer than it is in the colder months.

CLINICAL TYPES.

It is customary to distinguish two main forms of Vincent's angina—an ulcerative and a membranous or diphtheroid; Rolleston holds, however, that the former is but a more advanced stage of the latter. The slough which covers the ulcer may simulate diphtheritic membrane so closely that even after considerable experience the condition may be regarded as diphtheria, and treated accordingly, especially as the characteristic factor is often absent in the earlier stage. No help in diagnosis can be gained from the history of the onset, for the prodromal symptoms are merely those that are common to any anginal sore throat. Soreness of the throat is an almost constant symptom, and next in frequency come swelling of the glands in the neck, headache, vomiting, and shivering. Nasal discharge also occurs in many cases, just as it so often does at the beginning of diphtheria.

The resemblance to severe diphtheria is apt to be increased by the presence of faucial œdema. Though cervical adenitis may be considerable, it is seldom, if ever, suppurative.

The fœtor of Vincent's angina, though absolutely characteristic and quite distinct from that of malignant diphtheria, may mislead those who have had no experience of the former disease.

It is a unilateral affection in the great majority of cases, or, if both sides of the fauces are involved, the lesions are predominant on one side. The uvula is apt to be affected also, and it has even been completely destroyed by the ulceration, though damage to it is generally less considerable, and regeneration of tissue occurs. The larynx is seldom involved, but ulcero-membranous stomatitis due to the same fuso-spirillar symbiosis has been recorded both in association with and independently of the faucial lesion.

THE TEMPERATURE.

Disproportion between the severity of the local and general symptoms is one of the most striking features of Vincent's angina. The constitutional disturbance is generally slight, or at least lasts only during the pyrexial period, which in most cases is short. In five of Rolleston's thirty-two cases the temperature was normal throughout the period of observation, though the local process was still in an acute stage on admission; in ten it ranged between 99° and 100° F.; in only four did it rise above 102° F., the highest reading being 103.8° F. In eleven cases the temperature became normal within twenty-four hours of admission, and in only two did the pyrexia last for more than four days after their arrival.

DURATION.

Compared with diphtheria, however, the specific disease which it most closely resembles, Vincent's angina runs a protracted course. A diphtheritic throat generally becomes clean within a few days of the injection of antitoxin; the healing process in Vincent's angina requires a much longer period as a rule. In Rolleston's series of thirty-two the average course was eighteen days, the extreme limits being five days in the mildest and fifty-nine days in the most severe. A still more chronic course has been recorded by several writers. Bayer had a case which lasted between three and four months, defying all local treatment, and recovering ultimately under strengthening diet and arsenic. Pusateri's case lasted for over a year, tuberculous ulceration of the tonsils having been at one time feared.

Relapses occurred in two of Rolleston's cases. One occurred on the ninth day, and was attributed to accidental inoculation during painting of the throat as the child struggled. The other relapse occurred without obvious cause on the twenty-fourth day. In both cases the right tonsil and right side of the uvula were involved in the relapse, whereas the left tonsil and left side of the uvula had been affected in the initial attack.

As a rule the fuso-spirillar organisms disappear as healing commences, the fusiform bacilli persisting longer than the spirilla.

COMPLICATIONS.

Fortunately, Vincent's angina is seldom accompanied or followed by complications of any serious nature. The cervical glands do not suppurate; otitis media does not ensue, nor does paralysis. There may be transient albuminuria in a few cases. It is said that when stomatitis accompanies the faucial lesion septic sequelæ are more liable to occur, but luckily the general stomatitic form is itself exceptional. A small number of cases in which death has resulted from septic broncho-pneumonia have been recorded, but upon the whole, severe though the local lesion may appear to be, it has a very good prognosis.

TREATMENT.

In most cases it is sufficient to swab the affected parts night and morning with undiluted tincture of iodine, as Vincent himself recommends. If fœtor is extreme, the throat may be syringed with a solution of potassium chlorate and myrrh, or with chlorine water. In several cases in which healing seemed to be delayed the application of powdered methylene blue to the ulcers has been followed by rapid improvement, and this remedy deserves further trial. The use of anti-diphtheritic serum seems to do no harm, so that if it has been given under the impression that the case was one of diphtheria, the cure is not delayed; if anything, it is accelerated, so that the use of the serum in doubtful cases is not contraindicated. Internal medication is not essential; the needs of each particular case as regards malt and iron, arsenic, or the like, will generally be obvious.—*The Hospital*.

Progress of Medical Science.

MEDICINE.

IN CHARGE OF W. H. B. AIKINS, F. A. CLARKSON,
BREFNEY O'REILLY AND F. C. HARRISON.

Catching Cold Phobia

Laying aside unfounded traditions and depending solely on our present knowledge, Brady says that it may be confidently affirmed that the vulgarly listed causes of respiratory disease, such as cold, dampness, exposure, wet feet and draughts, are, for all practical purposes, entirely negligible factors, and the only precaution necessary against them is the effort to secure bodily comfort, which is purely instinctive, though very commonly misguided. Cold has no demonstrable etiologic relation with respiratory disease. Clean draughts are not only harmless, but salutary, being requisite for perfect ventilation. The phrase "catching cold" is meaningless, misleading, undignified and obsolete. The groundless fear of cold, fostered by the abuse of this misleading phrase, constitutes, he declares, a form of hysteria that opposes and embarrasses earnest therapeutic measures. So far as we now know, the true predisposing factors of the various respiratory diseases (acute and chronic) are dietetic sins, unhygienic clothing, overheated apartments, and defective ventilation. Prophylaxis, therefore, consists in directing intelligently man's instinctive effort to secure bodily comfort, together with reasonable isolation of every case of respiratory disease.—*Med. Record.*

Exophthalmic Goitre

A recent number of the *Lancet* contains the Purvis Oration on "The Treatment and Prognosis of Exophthalmic Goitre," by Dr. Hale White, Senior Physician to Guy's Hospital. Conclusions are drawn from 54 cases whose subsequent history could be traced and who entered the hospital during a period of ten years. Of this number 12 who showed no improvement while in the hospital subsequently became well. Dr. White claims that the disease has a natural tendency to get well, and from a com-

parison of the vital statistics of normal persons and those suffering from the disease, claims that the expected deaths are somewhat but not much greater than among the healthy.

In regard to the subsequent histories of such cases, from private and hospital practice he has classified them as follows:

	Done Well.	Moderately Well.	Not Well.
40 hospital cases	26	12	2
47 private cases	35	9	3

From this it would appear that the majority of the cases do well, and as might be expected cases in private practice do better than those under hospital treatment.

Dr. White is apparently not very favorable to operative procedures in his treatment of such cases. In 11 cases four died as an immediate result of the operation, a mortality of nearly 40 per cent., and even after operation the patients are not all cured. Better statistics can, of course, be shown, but this is only in selected cases, usually mild ones, in which recovery might be expected anyway. As a means of hastening cure, particularly among wage-earners, the operation is perhaps justifiable.

Great emphasis is laid on rest, physical and mental, and fresh air, with change of scenery as the progress of the case admits. These patients also require forced feeding, with plenty of plain simple food. In regard to drugs, he has used Moebius's anti-thyroid serum, beginning with five minims and increasing to thirty, three times a day, and apparently it has given results in some cases. Quiet must be assured, and, if necessary, hyosine 1-100 grain should be given. Paraldehyde or the bromides may be used in less severe cases. For tachycardia he uses digitalis.

Absorption of Sugar in Nutrient Enemata

The value of sugar as a diffusible and nourishing food for rectal administration has long been firmly believed in by many physicians. In the *Deutsche Archiv. fur Klin. Med.*, von Halasz gives the details of experiments designed to estimate the relative merits of different sugars used for this purpose. He injected them into the colon by the ordinary funnel and soft tube, and analysed the urine and the subsequent faecal evacuations. Solutions of strengths up to 40 per cent. were used, and the volume of each enema was 500 c.c. Dextrose is retained better than cane sugar, and levulose is inferior to both in this respect. Lactose and maltose are not well absorbed, especially the latter,

which is not well borne by the colon; the former is as well retained as dextrose. Cane sugar and dextrose are absorbed readily, and to an extent greater than is generally supposed. Thus in one case 144 gm. of dextrose were absorbed from a single enema of 40 per cent. strength, and cane sugar is almost equally readily taken up. Of the latter, strengths of 10 to 30 per cent. answer best. In no case did the urine contain sugar after these experiments. Since it may be alleged that the disappearance of such large quantities of sugar introduced into the rectum may be caused by their destructive fermentation, the author mentions experiments which show that this accounts for but little of the lost carbohydrate; and other observations on dogs are quoted to show that after the small intestine has been ligatured and divided off from the large, sugar solutions are absorbed from the colon just as readily as before. That some four to five ounces of such an excellent tissue-sparing food as dextrose can be taken up from a nutrient enema is an addition to our knowledge worth having. In the *Zentralblatt f. Chirurgie* Berendes extols the same sugar for subcutaneous and intravenous feeding. The maximum which can thus be introduced without setting up glycosuria is about 50 gm. per day. In this way 300 calories may be taken up; caution is necessary, as glycosuria ensues if the treatment is continued for several consecutive days.—*The Hospital*.

A New Sign of Paralysis •

Drs. Pierre Marie and Foix draw attention to a new sign observed by them in certain cases of paralysis of organic origin. It is produced by a slow and progressive, but forced, flexion of the toes, avoiding at the same time a forced extension of the foot. When this is carried out in a patient affected with paralysis it excites a reflex movement of the lower limb, consisting of flexion of all three segments of the limb, together with internal rotation and adduction of the foot. This movement is slow and regular, and the limb remains in the final position for a certain length of time after cessation of flexion of the toes. Transverse pressure of the foot produces the same result, but it may only induce a contraction of the leg. The authors have observed this sign in almost all cases of spastic paralysis, of hemiplegia, and of the spastic familial diseases. In hemiplegia it is as constant and early a symptom as the sign of Babinski. The reflex movement is closely analogous in its form to that described by Claude in hemiplegies; but the authors have not been able to attach to it the same prognostic significance.—*The Hospital*.

Types of Graves' Disease

J. G. Mumford (*Boston Medical and Surgical Journal*) reports two dissimilar cases of this condition, one typical and the other atypical. The former was that of the gradual onset of dyspnœa, dyspepsia, pain, and nausea after eating and a state of continual apprehension. After the persistence of these symptoms for two years there developed mild tremor of the fingers. A year later the characteristic symptoms of enlarged thyroid, exophthalmos, and tachycardia developed. During the next fifteen months vigorous medical treatment was employed, chiefly with the administration of neutral hydrobromate of quinine in five grain capsules three times a day. This produced great relief during the early months; later the shock of grief caused the reappearance of all the former symptoms in an aggravated form. The case now presented all the symptoms of acute hyperthyroidism, and a radical operation was performed, the patient being brought to operation practically without her knowledge, in order to ensure a calm state of mind. The operation was successful and the most striking result was the calm, tranquil, and happy attitude of the patient. The second case was that of a young woman who became suddenly sleepless, fretful and irritable, and a week later had a marked tumor of the thyroid, with no other evidence of hyperthyroidism. Operation was at once performed, and the whole of the left lobe removed. The patient was well for one year, at the end of which there returned intense nervousness, and many of the classical symptoms of Graves' disease with massive enlargement of the remaining lobes of the gland. After two months of futile medical treatment, a second operation was performed under great difficulties on account of the vascular cicatricial tissue from the former operation, and the pyramidal lobe and half of the right lobe were removed. In spite of every reasonable operative precaution to avoid increasing the hyperthyroidism, this developed immediately after the patient was put to bed, with intense and prolonged nausea and vomiting, excessive irritability and apprehension, and at the end of twelve hours, with rise of pulse to 140, embarrassed, intermittent, and irregular heart action, and the supervention of cardiac dilatation. This was a picture of extreme and grave thyroid poisoning. The patient died thirty-six hours after the operation.—*Medical Record*.

OBSTETRICS AND GYNAECOLOGY.

IN CHARGE OF ADAM H. WRIGHT, K. C. M'ILWRAITH, FRED. FENTON
AND HELEN MACMURCHY.

The Value of Delirium in the Prognosis of Puerperal Infection

Devillard (*Jour. de Med. et de Chirurgie Prat.*). The prognosis of puerperal infection is often extremely difficult, as cases apparently mild become rapidly worse, while others, which appear hopeless, recover. The writer directs attention to the prognostic value of delirium in this condition, based on a study of 18 recent cases. Of other symptoms the pulse gives important information, and when the rate rises to 140 the condition of the patient is grave. The temperature is less trustworthy, as many patients recover after temperatures of 104°. A discordance between the pulse and temperature is rare and is a most serious indication; such cases are usually fatal. Dyspnoea is a bad symptom, and alteration of the patient's features or anxiety about herself are also grave indications. None of these conditions, or the examination of the blood, or the formation or otherwise of an abscess after injection of turpentine gives a definite indication when taken singly, though they possess considerable prognostic value in combination. It is otherwise as regards delirium, which, though rare, is in itself a symptom of the utmost gravity and usually indicates a fatal termination. Instead of being anxious and disturbed, the patient may present an exaggerated feeling of well-being and express a desire to return home or undertake her usual occupation, which is one of the clinical types of delirium observed in puerperal sepsis. At other times, instead of this simple gaiety, the patient may suffer from illusions or hallucinations of sight or hearing, so that she has visions of celestial personages or demons. At times the excitement is of a maniacal type, in which the patient struggles and attempts to get out of bed in order to strike or escape from the beings she sees around her. Occasionally these types of delirium pass into each other, as in a patient who passed from a quiet type to one of extreme excitement.—*Med. Review.*

Edinburgh Obstetrical Society—Narrow Pelvis

Professor Sir Halliday Croom, in a paper on the narrow pelvis, said that when its measurement was between 3 and 3½

inches, if the case was seen early, premature labor might be induced; and, if late, forceps might be employed. In premature labor the risk to the mother was very small, but the fetal mortality averaged 30 per cent., and this rate was much increased by further deaths occurring in the first year of life. Alternative treatments were Cæsarean section, pubiotomy or symphysiotomy, and the intrapelvic application of forceps supplemented by pubiotomy. In high forceps cases, the maternal mortality was 4 per cent. and the fetal 30 to 40 per cent. As regards symphysiotomy and pubiotomy, these operations ought to be carried out in a hospital. In a primipara with a seriously contracted pelvis, the option seemed to him to lie between premature labor and Cæsarean section; the latter was preferable. Pubiotomy did not do more to save the child, and the risk to the mother was high. In cases of moderate contraction, with the head not engaged, high forceps was a dangerous method. Dr. Munro Kerr said that in the Edinburgh school high forceps was looked on as a suitable method of treatment in many cases. He used to pull children through a conjugate below 3 inches, but that gave a fetal death-rate of 50 per cent. Now he gave endless time for molding during the second stage, and he found that spontaneous delivery occurred in 50 to 60 per cent. of cases. He entirely agreed with Sir Halliday Croom regarding pubiotomy. It was an operation to be kept in reserve, and should not be selected during pregnancy as the operation of choice. Dr. Haig Ferguson agreed that the high forceps operation was not now justifiable if the head was not engaged at the brim. Dr. Dewar having asked what was the smallest diameter in which a practitioner could safely use forceps at full time, Sir Halliday Croom answered not under $3\frac{1}{4}$ inches. Dr. Fordyce said little attention had been paid to the old operation of turning, on which many country doctors relied. Professor Croom, in reply, stated that, in his experience, turning was worse than high forceps.—*Brit. Med. Jour.**

Intestine Drawn Through Perforation in Uterus after Abortion

Everke (*Monats. f. Geb. u. Gynäk.*, July, 1910) exhibited, at a meeting of a medical society, a segment of intestine which had been dragged down into the vagina by an apparently qualified obstetrician when engaged in emptying the uterus after an abortion. The patient was sent to Everke at once, and he performed

*Professor Croom's opinion will not be endorsed by many obstetricians in Canada who believe that "high forceps" is much more difficult and dangerous than turning.)

an abdominal section, as peritonitis had set in. A perforation was discovered in the posterior wall of the uterus, through which the loop of bowel (large intestine) had been drawn down to the extent of nearly 8 in. The serous coat was uninjured in the middle of the loop, but had been stripped off at the sides. About 4 in. of the prolapsed bowel were resected, the ends of the divided intestine closed, and enteroanastomosis practised. This proved very difficult owing to the position and fixation of the lower part of the large intestine and the length of the segment incised. A tampon was inserted into the uterus, the laceration closed, and a Mikulicz drain applied. The patient died of peritonitis on the second day. Everke believed that it would have been better had he made an artificial anus. Schnell, of Elberfeld, in discussion, observed that this terrible accident would never occur if the obstetrician relied on his finger, which can be worked intelligently for emptying the uterus after abortion. Practitioners, he declared, were far too ready to have recourse to the curette and ovum forceps.

The Vomiting of Pregnancy

Pinard (*Gaz. heb. des sci. m d. de Bordeaux*) lays stress upon the importance of the pulse in determining the treatment to be followed in the vomiting of pregnancy. Vomiting occurred in 42 per cent. of all pregnancies coming under his notice, and various therapeutical methods have been employed to arrest it. He considers the acceleration of the cardiac pulsations to be the first manifestation of the tox mia which causes the vomiting, due probably to a poison secreted by the ovary or by the ovum. In all cases of vomiting attention should be directed to the pulse, and when, in spite of rest, milk diet, and oxygen inhalations, the pulse reaches 100 and remains there or above it, even without any rise of temperature, the pregnancy should be terminated by the induction of abortion.—*N. Y. Med. Jour.*

Pruritus of the Vulva in Pregnancy

Rudaux (*La Clinique*) finds that pruritus is a common trouble among pregnant women, and that it is often so aggravated as to entail loss of rest and sleep, and to induce pronounced nervous irritability. In some cases the cause is without doubt the presence of more or less well-marked discharge, but he has found sugar in the urine of all the pregnant women who have complained of discomfort and irritation of this part. He permits no ingestion of sugar or sweets, and prescribes for them Vichy

water as a drink. A local application of hot water, with 10 grams of chloral, is made four times a day, the parts being afterwards treated with an ointment of ichthyol 10 grams, and ben-zoin. A few days later a powder made up of zinc oxide, bismuth and talc will be found useful. If there is any leucorrhœa a morning and evening douche containing 20 grams of sodium borate is prescribed.—*The Lancet*.

Complete Treatment of Eclampsia

The mortality rate of eclampsia in the United States is still about 33 per cent. according to Dr. B. C. Hirst. He believes that thorough treatment along the lines which he lays down in the *American Journal of Obstetrics and Gynecology* will reduce this mortality below 10 per cent. Two ounces of castor oil with a minim or two of croton oil are introduced into the stomach with a tube; purgation is continued by 2-drachm doses of concentrated Epsom salts solution if the patient is able to swallow. Lavage of the stomach and colon are carried out. Diaphoresis is effected by thirty minutes in a sweat cabinet every four hours. After the first sweat a quart of salt solution is injected under the breasts, and subsequently at least as much per rectum after each sweat. If the blood-pressure is above 180 m.m. of mercury, 16 oz. of blood are withdrawn by venesection. Fifteen minims *veratrum viride* is given hypodermically; and afterwards 1-100 grain of nitroglycerine every four hours. Chloral and chloroform are sometimes used for convulsions, but are regarded as unimportant. One grain of parathyroid extract is administered every four hours. If labor is going on, the membranes are punctured, but no form of *accouchement force* is allowed. Finally, treatment on this distinctly heroic scale is continued with lessening severity for a week after convulsions cease.—*The Hospital*.

PAEDIATRICS

IN CHARGE OF W. J. GREIG.

Pylorus, Congenital Stenosis of. SCUDDER. *Surgery, Gynecology and Obstetrics*, Sept., 1910.

The author discusses the topic under the following heads:

I. The generally accepted facts concerning this condition are stated. The chief of these are: persistent vomiting soon after birth; the presence of pyloric tumor, which may be felt, or photographed by the X-rays.

II. The material used for his paper. This consists of the report of a number of cases operated on, 9 by himself and 6 by others. The operation was done between the ages of 14 days and 10 weeks; the operation was posterior gastro-enterostomy, and the result successful in every case.

III. Effects of the operation on the metabolism of the child. Photos are given of the 9 children, which show them to be well. Therefore the nutrition of the child is unaffected.

IV. Persistence of the tumor after operation. Judging from X-rays taken with bismuth in the stomach, in normal and abnormal stomachs, and also judging from several post-mortems, the tumor does persist.

Poliomyelitis. FLEXNER. *Journal Am. Med. Assoc.*, Sept., 1910.

A series of articles on this live subject have been appearing lately in the *Journal* by Flexner and Lewis. The present is a summary of the previous articles. He discusses it under the following heads:

(a) *Contagiousness.*—Flexner and Lewis, of New York, and at the same time Landsteiner and Leriditti, in France, have isolated an extremely minute filterable organism which, when injected into monkeys, has invariably produced poliomyelitis with paralysis.

(b) *Clinical Manifestations.*—There is a striking similarity between the frank examples of epidemic poliomyelitis, whether occurring spontaneously in man, or produced experimentally in monkeys. With this difference, that in man the mortality is 10 per cent., while in monkeys, produced experimentally, it is 50 per cent.

(c) *Pathology.*—There is reason to believe that much of the

paralysis (especially the non-permanent) is the effect of temporary vascular impediments. These are outside the lumina of the vessels, which are reduced in size by pressure. Thrombi do not occur. Some of these functional derangements are anæmic in origin; others are caused by slight degenerations, and others by focal hæmorrhages and œdema. All these changes may disappear. But where actual necrosis is produced, the paralysis is permanent.

(d) So far the virus has not been identified under the microscope. The filtrates are highly potent, 1-100 of a c.c. being sufficient to produce paralysis when injected into the brain of a monkey. The virus is highly resistant to external agencies. But 1 per cent. H_2O_2 solution, and a solution of menthol readily kills it. Also $50^\circ C.$ of heat maintained for half an hour.

(e) *Inoculation of Other Animals.*—This failed. Inoculations were made in guinea-pigs, rabbits, rats, mice, dogs, cats, sheep, cows, horses, goats, pigs, chickens, but without effect, so far the monkey being the only susceptible animal.

(f) *Mode of Infection.*—A number of experiments are given which go to show that (aside from inoculation) the naso-pharyngeal mucous membrane is the usual portal of entry for the virus. The writer calls attention to the similarity in this respect to epidemic cerebro-spinal meningitis. He also points out the probable fact that the virus may pass by a reverse lymph current from the meninges into the naso-pharynx, and thence externally.

(g) *Immunity.*—Clinically, both in mankind and in monkeys, one attack of poliomyelitis protects against another attack. This appears also to be true of the experimental disease. Experiments were then performed by means of injections of the virus (in various degrees of strength) and of immune sera, to ascertain whether immunity could be produced. The results were negative.

(h) *Production of a Serum.*—The sheep appears to be the most likely animal from which a serum might be produced.

Bacteriology of Acute Respiratory Affections in Children, as Determined by Cultures from Bronchial Secretions.

L. EMMET HOLT. *Journal of American Medical Association*, October 10, 1910.

This article must be read to be appreciated. Suffice it to say that sputa examinations were made in a number of cases of refractory and persistent pulmonary conditions, and very frequently the influenza bacillus was found. Other organisms were also found, but the author tries to emphasize the fact that

the influenza bacillus was found so constantly in these cases; but never between the end of May and the middle of October. In some of the cases, a polyvalent, heterogeneous influenza vaccine was used with immediate beneficial results.

An Investigation Into the Occurrence of Adenoids in Three of the London County Council Elementary Schools.

Brit. Journal of Children's Diseases, Feb. and March, 1910.
By MACLEOD YEARSLEY, F.R.C.S.

The importance of this paper is realized when we read that 2,315 children were examined.

Conclusions.—1. That an average of 37 per cent. of the children had adenoids, and that 75 per cent. of these 37 per cent. had enlarged tonsils as well.

2. That 31 per cent. of adenoid children are mouth breathers, complete or partial, and that extreme hypertrophy of the tonsils may give rise to mouth breathing without adenoids.

3. Sex appears to have no influence.

4. Adenoids are most common about the age of 8 years, and are next most frequent at about 12 years.

5. That true aprosexia (inability to keep the attention fixed for any length of time) is often confused with apparent dullness due to defective hearing, and that true aprosexia only occurs in about 4.7 per cent. of the adenoid cases, is most frequent in girls, and is always associated with a large amount of adenoid tissue.

6. That the so-called adenoid facies is uncommon except in association with a marked degree of adenoids.

7. That the association of an abnormally high palate with adenoids is rather due to peculiarities of cranial formation than to extra-uterine influences of nasal stenosis, and that if there is any relation between a high, narrow palate and adenoids, it is probable that the palate shape is rather the cause of the adenoids than the reverse.

8. That adenoids have something to do with the presence of carious teeth, and that this is probably due to the harboring of germs by the adenoids.

9. That the percentage of ear complications in adenoid children is about 10.8 per cent., and that adenoids are by far the most important factor in the etiology of ear affections in children.

SURGERY

IN CHARGE OF E. E. KING, G. A. BINGHAM AND
C. B. SHUTTLEWORTH.

Treatment of Vomiting After Chloroform Anaesthesia

In Keay's opinion (PRACTITIONER) the cause of this vomiting varies in almost every case, and generally both the central nervous system and the stomach are at fault. The derangement may be chiefly central or chiefly local, but there is always some combination of the two. In very severe cases interference with the functions of the liver and general metabolism may be the cause. A nervous patient who has had a minor operation with short anaesthesia, feels violently sick, and the strenuous efforts to vomit can be distinctly heard through a closed door. A little mucus is the result. If an enema of bromide and chloral be given the violent retching ceases as the feeling of nausea disappears. If the patient has not been properly prepared for the anaesthetic by low diet and tonic treatment, nausea and vomiting come on early, usually during the administering of the chloroform, and ceases, or are lessened in severity when the stomach is emptied. This proves that with chloroform anaesthesia the stomach is made irritable and wants rest. The rational treatment, therefore, for ordinary cases is: give nothing by the mouth for twenty-four hours till Nature has reasserted herself. Any foodstuff, however readily digested, if introduced into the stomach, will further irritate that organ. Thirst, which may be complained of, can be assuaged by saline enemata. When the tongue and mouth feel dry, rinsing out the mouth with aerated soda-water or lemon-water, either hot or cold, will relieve the condition.

The vomiting tends to be more severe when the anaesthesia has been prolonged. The treatment for such cases is long draughts of strongly alkaline solutions, aided by counter-irritation over the epigastrium. Bicarbonate of soda dissolved in hot water may be given by the tumblerful. Hot fomentations, poultices with or without mustard, blisters, or an ice-bag, are all efficient counter-irritants for the epigastrium. Of these, hot fomentations or a light poultice are the best. It is often found necessary to use some medicinal means to cure the gastritis. Keay has found that a mixture of dilute hydrocyanic acid, bismuth and soda acts very well, and in some patients with a foul tongue, powders of

rhubarb, bismuth and soda are useful. In all major gynecologic operations, attended with some degree of shock, whether due to excessive exposure of the abdominal contents, to great loss of blood, or to sepsis, the complicating effects of the anæsthetic are more pronounced. After most abdominal operations flatulence is relieved by giving salines by rectum, from one pint to one quart every four hours, a rectal tube being left *in situ* for an hour or so between times. Rubbing the abdomen adds to the comfort of the patient; more vigorous treatment may be required, such as turpentine enemata. If the violent sickness still persists on the second day, castor oil or magnesium sulphate should be given by the mouth. Although these drugs are most often rejected, a certain quantity stays down, and will do good. If the bowels do not act in six hours an enema of soap and water will prove effectual. Peristalsis, which is failing under the stress of the constant sickness, can be sustained by rectal enemata of brandy and water and sips of brandy by the mouth.

When the vomited matter is hæmorrhagic, and resembles beef-tea dregs or coffee grounds, the patient should be stimulated by copious draughts of hot soda solution, and in addition a solution of adrenalin chloride, m v to m x, in a teaspoonful of water, should be given by mouth. It stimulates the muscles of the stomach walls, blanches the dilated capillaries, and sets up regular rhythmical contractions of the stomach, which causes its contents to follow their natural course and to flow on into the duodenum. For the collapse accompanied by an exceedingly rapid pulse, which sometimes ensues in cases of protracted and exhausting vomiting, salines and general stimulants are much more effectual than cardiac stimulants even in very large doses.—J. A. M. A.

Tuberculous Appendicitis

Lejars (*Semaine Médicale*) reports several cases of acute tuberculous processes in the appendix, with or without tuberculous or ordinary peritonitis. The patients were between 20 and 32, and the feature common to all was the distention of the abdomen ushering in and persisting after the acute symptoms. In other cases the appendicitis was an ordinary inflammation, but was embedded in a focus of tuberculous peritonitis. In another group of cases an acute tuberculous peritonitis simulated ordinary appendicitis. In one such case the incision in the iliac

fossa showed that the omentum, caecum and appendix were studded with miliary granulations, but there was no ascites or abscess, and he sutured the abdomen without removing anything but a scrap of omentum for microscopic examination. Contrary to expectations, this exploratory laparotomy seemed to usher in a turn for the better. In this tuberculous peritonitis with localization mainly in the iliac fossa the acute phase is often brief, the pulse remains good and the temperature drops soon, in marked contrast to the great distention of the abdomen suggesting diffuse peritonitis. Evacuation of the ascites and removal of the appendix at need will generally arrest the acute phase while exerting a beneficial influence on the tuberculous peritonitis as a whole. Chronic tuberculosis in this region should be suggested by the contrast between the size and extent of the non-limited tumor in the iliac region and the absence of fever and of any noticeable reaction. Ascites should also suggest a tuberculous process, especially if persisting. Differentiation is important on account of the prognosis.—*J. A. M. A.*

NOSE AND THROAT

Ethmoidal Neuroses

Prof. Killian, of Freiburg (*Journal of Laryngology, etc.*, November, 1910):

Killian includes under this title all those reflex neuroses which arise from the area supplied by the nervous ethmoideus. He wishes to assign a special position to these neuroses. In his paper the writer details the anatomical and physiological conditions by means of diagrams. The ætiology in nearly all cases is of local origin. The mechanical and chemical irritation of the ethmoid region, by the air of closed rooms, by the dust of the city streets, by impure atmosphere, and by other causes, stimulates the nerve endings, and thereby induces hyperæsthesia, the foundation and beginning of every case of reflex neurosis. To form a proper opinion, examination by a cotton-armed probe is necessary to determine the degree of irritability.

The degree of hyperæsthesia is determined in two ways: 1. Through subjective sensations as to the degree of irritation or pain. 2. Through the objective results of the irritation. These results are local, regional and distant. Local: hyperæmia and hypersecretion. Regional: ocular effects, such as irritation of the canthus of the eye, and of the conjunctiva, and increased flow of tears. Distant: nasal cough, sneezing and asthma.

In treating these cases the passage of the air through the nose must be free, as the particles of dust collect much more freely in narrow nasal passages than when normally wide in the ethmoid region. In asthma, also, it is imperative to have nasal breathing made normal, thus removing the possibility of reflex origin. In addition, cauterization of sensitive areas may give good results. If these measures prove unavailing, dividing the trunk of the ethmoid nerve may be resorted to, a measure that has been successfully followed by Yonge and Neumayer.

A Further Study of the Bacteriology of Suppuration in the Accessory Sinuses of the Nose

Logan Turner and C. J. Lewis (*Edinburgh Medical Journal*, April, 1910):

Some of the conclusions of the authors are as follows:

1. Sinus suppuration is not caused by any one particular organism.

2. While bacilli may cause suppuration, pyogenic cocci of various kinds are often responsible.

3. Pneumococci, streptococci, staphylococci and diplococci are commonly met with in sinus suppuration.

6. That clinical and bacteriological investigations agree in showing that nasal infection of the antrum is more common than dental infection, the proportion being two to one.

10. That factor may be present in antral suppuration of very recent origin, as well as in chronic cases; and that antral cases of nasal infection, as well as those of dental infection, may be fœtid.

11. That recent cases of maxillary sinus suppuration, duration of which has been from two days to three weeks, readily cure by lavage. The lavage should be by the nasal cavity.

13. A certain proportion of chronic cases are cured by lavage.

17. Chronic cases, in which no streptococcus pyogenes is found in the pus, more readily respond to lavage than those in which the same organism is present.

21. We have no evidence that any special combination of organisms is responsible for the failure of treatment by lavage.

On the Nasal Offshoots of Hypertrophic Naso-Pharyngeal Tonsils

A. Meyer (*Zeitscher f. Laryngol.*, Vol. iii., Part III.)

While the normal naso-pharyngeal tonsils do not extend into the posterior choana, occasionally when hypertrophied they do. In these instances, after the operator has entirely removed the adenoid tissue from the naso-pharyngeal vault, the rhinoscopic mirror will still reveal fragments of tissue hanging down from the upper edge of each choana. These patients are either older children or adults, and the writer has only found it occur in cases in which the adenoid tissue was very abundant. His most pronounced case occurred in a man, aged thirty-five, who had recently undergone an operation for removal of adenoids. The nasal obstruction still remained. On examination, masses of adenoid tissue were found to fill up the space between the septum and the middle turbinal on either side at the entrance of the posterior nares. These were removed by snare through the nose, with perfect relief to respiration. Microscopic examination confirmed the diagnosis of intra-nasal adenoids.

Case of Superior Bronchoscopy Which Ended Fatally

Prof. O. Chiatri (*Monats. f. Ohrenk.*, year 44, No. 8.).

An undersized boy, aged 7, was admitted three days after inhaling a grain of maize. The chest was carefully examined. Auscultation afforded no help; but the X-ray revealed a shadow the size of a bean in the upper part of the left bronchus. Billroth's mixture was given, and a direct observation taken. After some trouble a foreign body was located in the left bronchus, and a portion removed with difficulty. The mucous membrane was much swollen. Suddenly the child stopped breathing, and no pulse could be felt. Tracheotomy, artificial respiration and various restoratives were all ineffectual, although carried on for about an hour. The examination had also lasted an hour.

At the autopsy the grain of corn, partially separated from the husk, was found firmly impacted in the left bronchus. A purulent bronchitis had already commenced on the left side.

Chiatri attributed the death to the debilitated condition of the child, associated with the length of time required for manipulation, and not to the anæsthetic. The impaction was so firm that even lower bronchoscopy would, in all probability, have failed in removal of the foreign body.

The Clinical Diagnosis of Tuberculosis of the Tonsil

Lee M. Hurd and Jonathan Wright (*New York Medical Record*, June 26, 1909.)

Tuberculous tonsils are usually pale. Their crypts contain cheesy detritus. The edge of the anterior pillar of the fauces is reddened, and the lymphatic glands are hard and swollen. The writers agree that we should not be satisfied in tuberculosis of the lymphatic glands simply with their removal, but that the tonsils should likewise be extirpated. In the cases of tuberculosis of the cervical lymphatic glands reported by them, in which the tonsils were also removed, nine out of twelve of the latter were tuberculous.

Editorials

THE ONTARIO MEDICAL COUNCIL

It is thought by many that a degree from the University of Toronto, should carry with it a license to practice in this Province. This means that the College of Physicians and Surgeons should be shorn of all its powers as to the medical curriculum, examining, and licensing. This would be such a radical change that physicians, teachers and legislators should carefully study the situation in all its aspects before endorsing it. In connection therewith the question will naturally arise: Is such a change in the interest of the University, or higher education, or of both? We understand it is proposed by those in favor of the change to deal similarly with all other Ontario Universities having medical faculties when they adopt a standard as high as that of the University of Toronto. It is probable that the outside universities would accept the Toronto standard at once.

In the first place let us consider the reasons which led to the establishment of the Ontario Medical Council. Before the Council came into existence there were three licensing bodies—the Medical Board of Upper Canada, the Homœopathic Board, and the Eclectic Board. The Universities, in addition to conferring degrees, soon acquired the power of granting licenses. There were therefore at that time in Canada seven or eight licensing bodies. Under this condition of things there was a race between the different competing Universities with the result that the University which had the highest standard had the

smallest number of graduates. One of the chief objects of the promoters of the Medical Council was to strengthen the position of the University of Toronto, although at that time it had no medical teaching faculty. It had, however, the strong support of the Toronto School of Medicine, which for many years sent all or nearly all of its students up to the University for examination. Two of the men who worked most strongly for the organization of the Council were Doctors Henry Wright and W. T. Aikins, at that time, Professors in the Toronto School.

It is somewhat difficult to realize the wondrous change that has taken place since that time. It would appear that the strongest friend which the Council had for many long years—the University of Toronto—may become its most dangerous enemy. It will be generally acknowledged by those who have paid much attention to medical matters that the Medical Council has done much admirable work in the way of raising the standard of medical education in Ontario. For many years it followed the example of the Toronto University in demanding four years of professional study before the final examination. Even at that time it was thought by some members of the Council that four years was not sufficiently long. The late Dr. Bergen advocated a five years course. In 1890 a committee was appointed to bring in amendments to the curriculum. The chief amendment carried was the requirement of a five years course of study from students after matriculating. It will thus be seen that the Council was for some time far in advance of the Universities as to its requirements.

It does not happen, however, that the Council was

always correct. In one respect it was wrong for years in demanding too many didactic lectures after such demands were considered absurd by competent teachers. Upon the whole, however, it may be confidently stated that the Council has never at any time done anything in the direction of lowering the standard of medical education. We have on many occasions referred to the fact that it is difficult for the present generation of physicians to fully understand all that it has done in the interest of higher medical education.

For many years the relationships existing between the Universities and the Council were of the most pleasant description. Unfortunately a feeling of antagonism between a few Members of the Council and the, so-called, School Men, that is, the representatives of the Universities and medical schools, arose between 1885 and 1890. A certain number of the members organized "The Medical Defense Association" in 1889. The most prominent men in this Association were Drs. Sangster, McLaughlin, Armour, Eastwood and Cockburn—all members of the Council. One of the contentions was that the representation of School Men was too large. Many statements made about these School Men were unjust and untrue. It happened, however, that a majority of the Council, even during these troublous times, were in sympathy with the representatives of the Universities. This Medical Defense Association died in about ten years. Since its disappearance things moved along pretty quietly in connection with the meetings of the Council for some time. Onlookers, however, have noticed for years that unsatisfactory features were gradually creeping into the Council's

proceedings. Many members recognized this fact but failed to provide the remedy. One of the reasons for their inaction was the disinclination of the "dying Council" of last year to make radical changes of any sort. We have every reason to believe that the new Council will assume a different attitude from that of the past in many respects.

We do not desire to discuss in detail the relationship existing between the University of Toronto and the Medical Council. We may state, however, that the members of the Teaching Staff are, without exception, dissatisfied with the treatment the Medical Faculty has received from the Council during recent years. We hope, however, this unsatisfactory condition of affairs can be easily remedied. A conciliatory attitude on the part of the Council would soon make a wondrous change, and would relieve the embarrassment of many members of the Faculty who are at heart friends of the Council.

In former days while the Medical Defense Association was waging war great objection was raised to the imposition of a tax of \$2 a year on the members of the profession. It was stated by some at that time that no assault would be made upon the educational institutions if the two dollar fee was absolutely remitted. Some of the insurgents also said if the fee was not remitted they would endeavor to destroy the Council.

We quote as follows from a letter written by a prominent professor of the University of Toronto, in 1892, regarding these statements:—"Truly an undignified position to assume: the fair and manifest inference being that the howl being raised against the alleged ascendancy of the schools was genuine to

the extent of a mean two dollars per annum, but no more. It is to be fervently hoped that some interest in the affairs of their own organization may be aroused among all the practitioners of the Province by the present agitation, and that by the time the House of Assembly meets again, better information and soberer reflection may have tempered the heated action and revoked the unwise conclusions of some who, in a tantrum over a trifle, declared their willingness to destroy *the most perfect medical legislation that any Country in the world enjoys.*"

May we add a few words from a Toronto University standpoint. As a matter of sentiment every graduate would be pleased to have its degree carry with it a license to practice. But let the graduates consider very carefully the possible or probable results. The University could not gain anything by the destruction of the Council. It would likely lose much. But one may say let the Legislature or the University of Toronto fix the standard. What does that amount to? It is a very simple thing to accept a standard. What may happen when a Faculty guides the "Standard," and its teachers examine the student? If we go back to this old condition of things (or very nearly the old condition) which University will have the most students? Certainly not the one which adheres to the highest standard and rejects a proper proportion of candidates at its examinations. Our Ontario system of controlling medical education, has been for many long years admired by the whole English speaking world. Attempts to copy it in many States and Countries have been thwarted by jealousies between the Universities themselves, and between the Universities and the Examining Boards.

Let us not now "destroy the most perfect medical legislation that any Country in the world enjoys."

It is only fair to state that the Professor referred to in a previous paragraph recently informed the writer that while he held certain views respecting the Council in 1892, and for some years after, he now holds a different opinion because of the changed condition of things medical in the University, and in the Province. At present we do not know whether the majority of University men who favor the proposed legislation wish the University of Toronto to take the place of the Council, and have supreme control of medical education in Ontario. Such a decision by the Government would probably please the Toronto graduates, but would arouse a very pronounced and strenuous opposition. In this connection that sturdy old Institution, Queen's University, surely deserves decent recognition.

Let us consider the probable consequences of the proposed legislation. All the present and future University Medical Faculties, would "accept the standard" and have the power to grant licenses. The Homœopaths would claim similar rights, and if we can judge from past history, would obtain them. Eclectics, osteopaths and other "paths" would be encouraged to clamor still more persistently for privileges. In other words the condition of things which the establishment of the Council to a certain extent remedied, would recur, and endless confusion would arise.

One may say in conclusion that mistakes of the past do not prove that the Medical Act is faulty. Our medical legislation in Ontario is admirable. Let us uphold it! If our Council fails to do its duty it would be better to "mend it" than to "end it."

PROPOSED MEDICAL LEGISLATION

Notwithstanding current reports there is no new Bill regarding medical legislation before the House. The Government, however, was asked to introduce an Act to amend "The Ontario Medical Act," as follows:—

His Majesty, by and with the advice and consent of the Legislative Assembly of the Province of Ontario, enacts as follows:

1. So long as the University of Victoria College and the University of Trinity College respectively remain federated with the University of Toronto, the member of the Council of the College of Physicians and Surgeons of Ontario to be chosen by each of the two first mentioned Universities, as provided by Section 6 (1) of "The Ontario Medical Act," shall be chosen by and shall be a representative of the University of Toronto, and, as the last named University by its Medical Faculty performs the medical teaching work previously performed by the Toronto School of Medicine and Trinity School respectively, the member of said Council to be chosen by each of said Schools as provided by said Section 6 (1) shall be chosen by and shall be a representative of the University of Toronto.

2. Every person who has heretofore obtained or who may hereafter obtain from the University of Toronto the degree of Bachelor of Medicine (M.B.) or Doctor of Medicine (M.D.) may within five years from the date of obtaining such degree present to the Registrar of the said Council the diploma or other proper evidence of the granting of such degree and that he is the holder thereof, and may apply to have

his name entered on the book or register referred to in Section 21 of said Act, and thereupon the Registrar shall, on payment of a registration fee to be fixed by the Council and approved by the Lieutenant-Governor-in-Council enter his name on said book or register as a person deemed to be qualified and licensed to practice medicine, surgery or midwifery in the Province of Ontario, and the provisions of said Act and of the rules and regulations of the Council respecting the admission and enrolment of students, their courses of study or medical education, and the matriculation, preliminary, intermediate, final or other examination, shall not apply to such applicant, but after registration as aforesaid the provisions of said Act applicable to persons whose names are inscribed on said book or register shall apply to him in the said manner and to the same extent as to such persons.

3. The provisions of Section 20 of the said Act shall not apply to the University of Toronto. (This section refers to the power and authority of the Council to fix and determine the curriculum.)

4. Any University, College or body in the Province of Ontario now or hereafter by law authorized to grant degrees in medicine and surgery, and which maintains a medical faculty and grants such degrees after a course of education, medical study and examinations therein which are claimed by it to be of a standard equal to the standard maintained by the University of Toronto for similar degrees, may apply to the Council of the College of Physicians and Surgeons of Ontario for a Declaration that its said standard is equal to the standard maintained by said University. Should the said Council make such de-

claration then Sections 2 and 3 of this Act shall apply to such University, College or body and to the persons who obtain such degrees therefrom. Should said Council refuse to make such Declaration there shall be an appeal from such refusal to the Lieutenant-Governor-in-Council, who may make or refuse such declaration, and if such declaration be made on said appeal said Sections 2 and 3 shall apply as if such declarations had been made by said Council.

“606”

Perhaps no medicine in recent years has attracted so much attention as what is termed “606.” There is, of course, a good deal of uncertainty as to the results accomplished and the dangers associated with it. We are told by a correspondent, “C. F. Marshall,” in the *British Medical Journal*, that it is improbable that the preparation has fulfilled its early expectations. It appears certain that it has a marked healing effect in certain cases, but some of the reports of its miraculous effects were incorrect. The claim that an abortive cure of syphilis could be obtained by “606” has not been substantiated. Prof. Neisser, who was for a time a strong advocate of the new treatment, has lately modified his opinion, and now suggests a combination with mercury and iodides. Prof. Gaucher, who has used it much, considers that it is only indicated in cases which do not improve under mercurial treatment, but that such cases are rare. It is also said by others that the administration of the preparation is often dangerous. Several deaths have occurred after its injection, some of

which, if not entirely attributable to the drug, were accelerated by it. It is thought by some that we are not justified in submitting patients, in the great majority of cases, to the treatment by "606," and perhaps lose valuable time by abandoning mercury and iodides.

The physicians in this part of Canada are anxiously awaiting reports regarding the success or otherwise in the treatment of the patients in the Toronto General Hospital.

TENTATIVE PROGRAMME OF THE CANADIAN HOSPITAL ASSOCIATION

The next meeting of the Canadian Hospital Association will be held at the Clifton House, Niagara Falls, on the 23rd and 24th of May. During the same week, it is expected that the Association of Superintendents of Training Schools for Nurses and the Ontario Graduate Nurses' Association will also meet.

The following is the preliminary programme:—

Dr. Charles Hastings, Medical Health Officer, Toronto, to read a paper on "The Relation of the Medical Health Officer to Hospitals."

Dr. N. H. Beemer, Superintendent of the Hospital for Insane, Mimico, on "The care of Alcoholics."

Dr. Gibson, of Belleville, "The Organization of the Medical Staff in the Smaller Hospitals."

Mr. Clarence Williams, Boston, on "The Heating and Ventilation of Smaller Hospitals."

Dr. Bruce Smith, on "A Word to Trustees of Hospitals."

Miss Lillian Uren, St. Catharines, "An Exhibit of Useful Devices for Hospital Work."

Mr. H. E. Webster, Royal Victoria Hospital, Montreal, on "Important Points in the Construction of Smaller Hospitals."

Miss McLennan, of Barrie, (Title to come.)

Miss B. Miller, St. Thomas, (Title to come.)

Dr. J. S. Hart, Toronto, "What the Average Medical Man Expects from the Hospital."

Miss Conroy, Superintendent St. Joseph Hospital, Glace Bay, N.S., "The Duty of the Hospital to the Pupil Nurse."

Miss Dela Mater, Superintendent Nicholl's Hospital, Peterboro', "Some Impressions of New York Hospitals."

Dr. Kendall, Physician-in-Chief, Muskoka Sanitarium, Gravenhurst, "Some Observations on Sanitaria of the Old Country."

Dr. Wayne Smith, Superintendent of the Washington University Hospital, St. Louis, Mo., (Title to come.)

Dr. Fredk. Washburn, Superintendent Massachusetts General Hospital, (Title to come.)

Dr. Young, Kingston, Assistant at Rockwood Hospital for Insane, Kingston, (Title to come.)

MASSEY MEMORIAL BUILDING

The university has fared well through the generosity of the well known Massey family. Two recent gifts are specially worthy of mention. The handsome Domestic Science Building, situated on Bloor Street near the north-east corner of Queen's Park, is the gift of Mrs. Massey Treble. It will be finished in about three months, and will cost over \$400,000.

On the 6th of January President Falconer announced that the Massey Estate had decided to erect a Students' Club Building at a cost of about one-half million dollars and present it to the University. The site set apart for the building extends from Queen's Park to the road, past the east side of the Main Building and from Wycliffe College to the old Observatory. We learn from the *Varsity* that the building will cover a rectangle 200 ft. x 360 ft., and inclose an open court of 80 ft. x 170 ft. The distance round the outside of the building will be one-quarter of a mile. The two main entrances will be on the south side, and in addition there will be two others on the west, three on the north and one on the east. Besides this there are two special entrances for the great hall, one on the south and the other on the east. There will be in the building one large hall, a gymnasium with modern equipment and swimming room, fencing, boxing and wrestling rooms, smoke rooms, billiard rooms, lounging rooms, rooms for the Y. M. C. A. library and offices for other purposes.

Work will be started as soon as weather permits in the spring, and along with the work of excavation will go the old gymnasium, which has become somewhat antiquated.

NOTIFICATION OF DISEASES

The M. H. O. of Toronto has sent a circular letter to the physicians of the city asking them to report all cases of tuberculosis as soon as a diagnosis is made. He says that the basis of any scheme for getting control of the tuberculosis problem rests upon the notifi-

cation of existing cases. It is necessary, in order that the Health Department may keep track of migratory cases, to disinfect houses which are or have been inhabited by tubercular patients and assist the friends of the patients, to take due precautions against the spread of the disease.

Dr. Hastings believes that co-operation on the part of the Medical Health Officer, the medical profession and the public at large is absolutely necessary before we can hope to institute an effective anti-tuberculosis campaign.

As we believe there is some misunderstanding on the part of many physicians as to the necessity of reporting certain diseases, such as measles, whooping cough, etc., the physicians of Toronto are required to report the following diseases: Diphtheria, smallpox, scarlet fever, typhoid fever, cholera, measles, whooping cough, tuberculosis, "or other diseases dangerous to the public health."

AMERICAN PROCTOLOGIC SOCIETY

The thirteenth annual session of this Society will be held at Los Angeles, Cal., June 26-27, 1911. The Society has recently announced that the cash sum of \$100 will be awarded to the author of the best original essay on any Disease of the Colon.

Essays must be sent to the Secretary of the Committee, Dr. Louis H. Adler, Jr., 1610 Arch Street, Philadelphia, Pa. Each essay must be designated by a motto or definition without signature or any other indication of his authorship, and to be accompanied by a separate sealed envelope having on its outside

only the motto or definition contained on the essay, and on the inside the motto or definition used on the essay and the address of the author. No envelope will be opened except that which accompanied the successful essay. The competition is open to graduates of medicine (not fellows of the Society), and to members of the senior classes of all colleges in the United States and Canada.

The date of the next meeting of the Ontario Medical Association has been definitely fixed for May 30th, 31st and June 1st at Niagara Falls, Ont. A number of prominent medical men have been secured to give the usual addresses, and the programme promises to be equal to anything in the past. The spacious rooms of the Clifton House will be used for the occasion. The local committee are sparing no pains to make the meeting of 1911 the greatest in the history of the Association.

Notes

Mr. John D. Rockefeller during the last five years has donated to the University of Chicago altogether \$35,000,000. The latest gift was one of \$10,000,000 in December last.

We are pleased to announce that the By-law in favor of giving the Western Hospital \$50,000 was passed at the recent elections by a very large majority, the vote being for—11,942 and against—5,194. So far as we know all the physicians in the city voted for the By-law.

Dr. R. L. Island after practising for thirty years in Rosemont has sold his practice to Dr. Blair, of Grand Valley. He was presented by the citizens of Rosemont with a beautiful address and gold mounted cane as an appreciation of his long professional career. He intends going to Bermuda for the winter and will then reside in Orangeville.

Dr. W. W. Ogden's record in connection with public schools of Toronto has been a very remarkable one. He was an active member of the School Board of Trustees for a period of 45 years. It was hoped by his many friends that he would continue to be a member of the Board for several years longer. It was a matter of surprise and regret therefore that he voluntarily resigned last December.

At the last meeting of the School Board on motion of Trustee C. A. B. Brown, seconded by Chairman Jas. Simpson, a resolution of regret at his retirement was passed.

GUELPH SANITARIUM. The main building of the well known Sanitarium at Guelph, Ont., was totally destroyed by fire early on the morning of January 6th. There were 45 patients together with a number of nurses, attendants and officials in the building at the time the fire broke out. Fortunately the alarm spread very soon and all the inmates of the building escaped without any casualty.

Mrs. Thos. Goldie, who owns a large stone residence on the grounds adjoining those of the Sanitarium, has given up her building temporarily to the officers of the Sanitarium. Twenty

of the patients are being accommodated here, while the other twenty-five are placed in rooms formerly occupied by the nurses.

THE MEDICAL COUNCIL ELECTIONS

The following are the members of the Ontario College of Physicians and Surgeons as returned at the recent elections:

- *Dr. Cruickshanks, Windsor, 1.
- *Dr. Welford, Woodstock, 2.
- Dr. McArthur, London, 3.
- *Dr. Emerson, Goderich, 4.
- Dr. Vardon, Galt, 5.
- *Dr. MacCallum, Thornbury, 6.
- Dr. Griffiths, Hamilton, 7.
- Dr. Merritt, St. Catharines, 8.
- Dr. Gibson, Sault Ste. Marie, 9.
- *Dr. Stewart, Fort William, 10.
- Dr. King, Toronto (East), 11.
- Dr. Hart, Toronto (West), 12.
- Dr. Bascom, Uxbridge, 13.
- *Dr. Young, Peterboro, 14.
- Dr. McColl, Belleville, 15.
- Dr. Spankie, Wolfe Island, 16.
- Dr. Lane, Mallorytown, 17.
- Dr. Klotz, Ottawa, 18.

Homeopaths.

- Dr. Hardy, Toronto.
- Dr. Jarvis, London.
- Dr. Wickens, Hamilton.
- Dr. Adams, Toronto.
- *Dr. Routledge, Lambeth.

The new members are indicated by the stars placed opposite their names.

Personals

Dr. Bruce L. Riordon, of Toronto, who has had a mild attack of typhoid fever, is recovering.

Dr. H. B. Anderson expects to sail for Italy on the 22nd. He will spend some months with Prof. Von Norden in Vienna.

Miss Stubberfield, a graduate of St. Michael's Hospital, has opened a private hospital at 64 Gloucester Street, Toronto.

Dr. Chas. Sheard, jr., of Toronto, is doing post graduate work in New York and is at present on the staff of the City Hospital of that city. He spent a few days with his parents in Toronto during the Christmas holidays.

Dr. N. King Wilson, of Toronto, has gone to London, England. After doing some post graduate work in that city he will go to the continent for a time. He expects to return to Toronto in about a year.

Dr. W. P. Kendall, Medical Director of the Tuberculosis Sanitarium in Muskoka, has been granted leave of absence to visit Europe and investigate the most modern methods of treating tuberculosis.

Dr. Gerald Fitzgerald, after a prolonged stay abroad has returned to Toronto for a while. He expects, however, to go to Germany in about six months, where he will continue his post graduate studies.

Lt.-Col. J. T. I. Halliday, M.D., who was Medical Officer of the 37th Battalion Peterboro' Rangers for 20 years, resigned last November. On the occasion of his retirement his brother officers presented him with a silver service.

Book Reviews.

Modern Treatment. The Management of Disease with Medicinal and Non-Medicinal Remedies. In Contributions by American and Foreign Authorities. Edited by Hobart Amory Hare, M.D., Professor of Therapeutics and Materia Medica, Jefferson Medical College, Philadelphia; Physician to the Jefferson College Hospital; assisted by H. R. M. Landis, M.D., Director of the Clinical Department of the Phipps Institute (University of Pennsylvania), Visiting Physician to the White Haven Sanatorium. In two volumes. Illustrated. Volume I. Lea & Febiger, Philadelphia and New York.

The first volume of this work more than fulfills what we had been led to expect from the advance notices. In the past fifteen or twenty years there has been much progress made in the art of therapeutics, chiefly, it must be admitted, by methods other than drug-giving, such as serum and vaccine-therapy. But even in purely medicinal treatment we have had many changes, brought about by the tendency to use active principles of drugs and the many products of synthetic chemistry that have come into such general use.

The greater part of Volume I. deals with treatment in general, and with special measures such as dietetics, hydrotherapy, etc. We would make special mention here of the articles on "Glandular Therapy," by Professor Beebe, and on "Tuberculin," by Dr. Pottenger. The last section takes up the infectious diseases and leaves nothing to be desired. The treatment indicated is eminently practical and lays down rules which can be carried out in one's ordinary general practice, not written purely from the hospital standpoint, as is the fault with so many text-books.

In printing and binding the book is in conformity with many others recently published by the same firm. We anticipate a good reception for the work and look forward with pleasure for the appearance of the second volume.

Diseases of the Stomach and Upper Alimentary Tract. By Anthony Bassler, M.D., Visiting Gastro-Enterologist to the People's Hospital, and Visiting Physician to the St. Mark's Hospital Clinic; Member of the American Gastro-Enterological and American Medical Associations; Fellow of the

New York Academy of Medicine, etc. Copiously illustrated with numerous half-tone and line-text engravings and 56 full-page half-tone plates (with nearly 100 figures), plain and in colors, from original photographs and drawings. Cloth, \$6.00. F. A. Davis Company, publishers, Philadelphia, 1910.

This volume commends itself to us in many ways. It would be hard to find a better statement of the methods of examination of the stomach contents and feces, and the chapter on the X-ray investigation of the alimentary canal is as good as any we have. Dr. Bassler has covered the ground well. Perhaps the style is not as clear in some places as one would wish, but on the whole the book is valuable.

Progressive Medicine. A Quarterly Digest of Advances, Discoveries and Improvements in the Medical and Surgical Sciences. Edited by Hobart Amory Hare, M.D., Professor of Therapeutics and Materia Medica in the Jefferson Medical College; Physician to Jefferson Medical College Hospital; assisted by Leighton F. Appleman, M.D., Instructor in Therapeutics, Jefferson Medical College. Vol. IV. December, 1910. Lea & Febiger, Philadelphia and New York.

This volume deals with diseases of the digestive tract and allied organs, the liver, pancreas and peritoneum; diseases of the kidneys; surgery of the extremities, shock, anæsthesia, infections, fractures and dislocations, and tumors; genito-urinary diseases; and ends with a practical therapeutic referendum. As usual, the information is brought right up to date, and one feels that the last word has been said, after reading these careful resumé. Progressive medicine has been a constant companion for many years, and after referring to it many times, we feel that it is no exaggeration to say that it is the best thing of its kind in the English language.

Lippincott's New Medical Dictionary. A Vocabulary of the terms used in medicine and the allied sciences with their pronunciation, etymology, and signification, including much collateral information of a descriptive and encyclopædic character. By HENRY W. CATTELL, A.M., M.D., Editor of International Clinics; Fellow of the College of Physicians of Philadelphia. Octavo 1108 pages. Freely illustrated with figures in the text. Flexible leather, thumb indexed. \$5.00 net.

The value of a dictionary depends upon its being up-to-date.

The bulk of the information is common and seldom referred to, but it is the new word and new idea in later literature that places the value on a medical dictionary. The number of additions and changes in a general encyclopædia are exceedingly few in five years, but the changes and additions in a medical dictionary are many and comprehensive. It is impossible to enumerate these changes, but we have not been disappointed in any word or term that we have tried to locate in Lippincott's New Medical Dictionary. It is some time since a medical dictionary has been published, and we believe that there is a need for this one and can thoroughly recommend it as a standard. It is bound in flexible leather with thumb index, making reference exceedingly easy, and the type and setting easy to the eye.

Surgery, Its Principles and Practice. In five volumes. By 66 eminent surgeons. Edited by W. W. KEEN, M.D., LL.D., Hon. F.R.C.S. Eng. and Edin., Emeritus Professor of the Principles of Surgery and of Clinical Surgery, Jefferson Medical College, Philadelphia. Volume V. Octavo of 1274 pages with 550 illustrations, 45 in colors. Per volume, cloth, \$7.00; half morocco, \$8.00 net. Canadian Agents: The J. F. Hartz Co., Ltd., Toronto. Philadelphia and London: W. B. Saunders Company. 1909.

The last volume of this most excellent surgery is at hand, and surely it is one of the best in the series of five volumes. The whole range of surgery has been covered in the series. The more general subjects have been dealt with in this Surgical Technique, by Dr. J. H. Gibbons, and Surgical Organizations, by Dr. A. J. Ochsner. The legal relations of the Surgeon, by Hampton L. Carrons, Esq., and a most comprehensive resume of the many difficulties in which the surgeon is placed in relation to his responsibility to the patient and others. It should be carefully read. Dr. Hobart Hare reviews the whole subject of General Anæsthesia, while Local and Spinal Anæsthesia, which is rapidly gaining ground, is most carefully brought up-to-date by Lennander and Zachrisson—other chapters of equal value make Volume V. a most important one in the series.

There is also a chapter on the use of the X-Ray and Radium. Radium appears to be, at the present time at any rate, a very stable quantity, and results show that it is doing great work, but time alone can stamp its true value.

At the outset the five volumes were promised to contain at least 4,000 pages, but in this volume we note that the total num-

ber of pages is 25% greater than that promised, or 5,500 pages dealing with surgery up to the last minute; this without any increase of cost to the subscriber. From a typographic and artists' standpoint, we can say that no work at the present time has ever been turned out on such beautiful paper, fine typography and excellent illustrations. The publishers have certainly done their utmost to produce a work that the distinguished editor has supplied them with. Than Dr. Keen, few men who have edited are surrounded with such eminent collaborators, and he is to be congratulated on the outcome of his strenuous labors.

Diseases of the Genito-Urinary Organs of the Kidney. Second Revised Edition. By ROBERT H. GREENE, M.D., Professor of Genito-Urinary Surgery at the Fordham University, New York, and HARLOW BROOKS, M.D., Assistant Professor of Clinical Medicine, University and Bellevue Hospital Medical School. Octavo of 605 pages, profusely illustrated. Philadelphia and London: W. B. Saunders Company. 1908. Cloth, \$5.00 net; half morocco, \$6.50 net.

This work combines both surgical and medical treatment, being the joint work of a surgeon and a clinician. It is a book that appeals especially to the general practitioner, because just those conditions with which he comes in daily contact are emphasized; because office treatment is given unusual prominence; because the subject is presented in a clear, forceful way.

Diseases of the kidney receive perhaps greater attention than is given in any other work of this size. The medical treatment of Bright's disease, uremia, etc., is elaborately presented. Surgical procedures are described minutely and each step illustrated by clear, helpful line drawings.

Diseases of the Skin. New (6th) Edition, Revised. A Treatise on Diseases of the Skin. For the use of advanced students and practitioners. By HENRY W. STELWAGON, M.D., Ph.D., Professor of Dermatology, Jefferson Medical College, Philadelphia. Sixth edition, revised. Handsome octavo of 1195 pages, with 289 text-illustrations, and 34 full-page colored and half-tone plates. Philadelphia and London: W. B. Saunders Company. 1910. Cloth, \$6.00 net; half morocco, \$7.50 net.

Dr. Stelwagon's work is conceded to be second to none, occupying a distinct position in the foreground of works on dermatology. Its excellence can be attested in no better way

than by the fact that six large editions have been required in as many years. This success is undoubtedly due to the thoroughly practical grasp which Dr. Stelwagon has on his subject, shown in the clearness of his style and the definiteness of his treatments. This new edition, just from the press, contains everything new in the field of dermatology. Especially do the articles on Pellagra and Tropical Skin Diseases reflect the latest advances. Many new illustrations have also been added.

The Pancreas, Its Surgery and Pathology. By A. W. MAYO ROBSON, D.Sc. (Leeds), F.R.C.S (Eng.) of London, and P. J. CAMMIDGE, M.D. (Eng.), D.P.H. (Camb.), of London. Octavo volume of 546 pages, fully illustrated. Philadelphia and London: W. B. Saunders Company. 1907. Cloth, \$5.00 net; half morocco, \$6.50 net.

The progress made within recent years in the knowledge of the functions and diseases of the pancreas has been so rapid that a book dealing with this important organ has become a necessity to every physician and surgeon. This entirely new work has the distinct advantage of incorporating the results of the original investigations of these eminent authorities, whose work along these lines has been unusually successful. There are chapters upon Anatomy, Embryology, Histology, Physiology, Pathology, Symptomatology and Injuries and Diseases, and there are special chapters on Chemical Pathology and Diabetes. Pancreatitis is very fully treated, as are also Pancreatic Calculi, Cysts, Neoplasms, etc.

A Text-Book of Physiology. For Medical Students and Physicians. By WILLIAM H. HOWELL, Ph.D., M.D., LL.D., Professor of Physiology, Johns Hopkins University, Baltimore. Third Edition, thoroughly revised. Octavo of 998 pages, fully illustrated. Philadelphia and London: W. B. Saunders Company. 1909. Cloth, \$4.00 net; half morocco, \$5.50 net.

Dr. Howell has had many years of experience as a teacher of physiology in several of the leading medical schools, and is therefore exceedingly well fitted to write a text-book on this subject. Main emphasis has been laid upon those facts and views which will be directly helpful in the later studies of general pathology and in the practical branches of medicine. At the same time, however, sufficient consideration has been given to the experimental side of the science, so as to inculcate in the student a proper regard for the importance of original research. The entire literature of physiology has been thoroughly digested by

Dr. Howell, and the important views and conclusions introduced into his work. Illustrations have been most freely used. In this new third edition much new material has been added and the entire text brought right up-to-date.

Manual of Physical Diagnosis. By BREFNEY ROLPH O'REILLY, M.D.C.M., L.R.C.P., M.R.C.S.

This book is now in press and will be ready for distribution in February. It has been duly copyrighted, and is published by Blakiston & Son of Philadelphia in their usual clean and well-arranged style. From several advanced sheets and proofs, containing introduction, preface, index, 47 illustrations and 12 plates, we have pleasure in predicting for it the consideration of the professors and teachers of medicine, as a useful and much-needed book for students. The book, when published, will be in convenient size and form about 400 pages. A complete review will appear in the March number.

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Original Communications

THE TREATMENT OF PNEUMONIA HISTORICALLY CONSIDERED*

J. H. ELLIOTT, M.B.,

Associate in Medicine and Clinical Medicine, University of Toronto; Senior Assistant
Physician, St. Michael's Hospital.

Pneumonia is by no means a modern disease. That it was well known to the ancients the writings of Hippocrates and others bear witness. By these writers it was confounded with pleuritis and other acute thoracic diseases, as reference to their works will show. Celsus refers to the spitting of blood and phlegm as one of the symptoms of severe pleurisy. We find this attempt at differentiation down to the time of Sydenham, when it was recognized that no real distinction could be made, and Sydenham's view was generally accepted.

"Having thoroughly considered all the various phenomena of a pleurisy, I conceive it to be only a fever occasioned by a peculiar inflammation of the blood, whereby nature throws off the peccant matter upon the pleura, and sometimes upon the lungs, whence a peripneumony arises; which in my opinion only differs from a pleurisy in degree and in respect of the great violence, and the larger extent of the same cause."[†]

Wallis in his edition of Sydenham writes: "It has been the custom of almost all authors, when treating of inflammations of the internal parts of the chest, to make a distinction betwixt pleurisy and peripneumony,—it is seldom found but these two affections are united in the same disease. Besides—they can scarce ever be distinguished by the symptoms, and to discriminate them would be of little use in practice, inasmuch as they require precisely similar methods of cure."

*An address to the Academy of Medicine, Toronto, Feb. 14, 1911.

†The works of Thomas Sydenham, M.D., London, 1788. Vol. I., p. 369.

From Sydenham to Laennec, peripneumony was the term applied to the more severe of the acute diseases of the chest, and pleurisy to the less severe.

The diagnosis of pneumonia as we recognize it to-day was made possible by the discoveries of Auenbrugger and Laennec, and the physical signs of the disease were clearly pointed out by Laennec. Later, the minute pathology was first described by Rokitansky, who differentiated the lobar and lobular varieties. Laennec gives to Pinel the priority of restricting the term pleurisy to inflammation of the pleura. Previously it had been used loosely to signify a pain in the side, particularly those which are continued and accompanied by an acute fever.

That the exudate in pneumonia was intravesicular and not interstitial was pointed out by Addison. The former belief that the disease was a local one with general symptoms is no longer held, but we now recognize it as a general disease with only local manifestations in the lung.

And more recent research leads us to believe that it should be classed among the acute infections, that it is in all cases a microbial disease, yet not always due to the same organism.

As in different periods the conception of the disease has varied, so has the treatment varied, the pendulum of medical opinion swinging widely.

Hippocrates made but little difference in the details of his treatment of peripneumony and pleuritic affections. For severe pain passing up to the shoulder or arm, he bled early and boldly, even to the extent of syncope if the pain was acute. If confined to the lower part of chest and abdomen, he purged gently, withholding food during the purging, and relieved the pain with fomentations, cerates, or linseed poultice. Cupping and the actual cautery are mentioned as useful in certain conditions.

Mild expectorants are advised, particularly after the seventh day. His directions as to diet are very full, generally giving but little food and that entirely liquid during the fever, and feeding very carefully during convalescence, gradually changing to soft food and then to full diet. Fatty and saline foods are advised, and barley water is perhaps the principal article of food at first; later wine and honey are added.

The treatment advised by Celsus* was as follows:

"It is right if the powers are sufficiently strong, to let blood, but if less, to apply to the precordia cupping glasses without the scarificator—friction on the shoulders, on the arms, feet and

*Celsus, *de re Medica*. Stegga's translation, London, 1837. P. 333.

legs, gently over the lungs and to do that twice daily—as pertains to food—there is need neither of salt, nor sharp nor bitter foods, nor those binding the bowels, but a little lighter food—on the first days gruel is to be given, of ptisan, or of maize or of rice, with this a sorbile egg, pine nuts, bread out of honey, or washed maize out of hydromel; then for drink not only pure water, but also lukewarm hydromel, or, if it is summer, also cold. If the disease is increasing it is sufficient to give these every other day; while it remains in the increase he should abstain, as much as circumstances allow, from all things except lukewarm water. If the powers fail they are to be assisted by hydromel.

“Against pain warm fomentations are to be applied, salt, well bruised, mixed with cerate is serviceable, because it erodes the skin slightly and draws thither the impetus of matter by which the lung is disordered. A plaster made from those things which draw matter is useful. Nor is it improper while the disease oppresses to keep the patient with closed windows; when it is lessened a little to admit the air three or four times daily, the windows being open a little. Then in recovery to abstain from wine for several days; to use gestation, friction, to add to gruels and the former foods, of greens, leeks; of flesh, heels and tops of pettitoes and little fishes, so that for a time nothing but what is soft and mild be taken.”

For the pain of pleurisy, incision of the skin and cupping are advised, also an application of mustard out of vinegar. In addition, “it is right to surround the side with a roll of sulphurated wool, then when inflammation has abated a little to use dry and hot fomentations.”

The treatment outlined by Celsus probably is a good description of that generally used in his time. He is recognized as a compiler rather than as an observer.

Paulus Aegineta* defines peripneumonia as “an inflammation of the lungs and supervening for the most part, upon violent catarrhs, cynanche, asthma, pleurisies, or other complaints, but being sometimes the original affection.” As do the other early writers, he confuses various inflammatory diseases of the chest. His treatment follows:

“If the peripneumonia was the original affection, and the strength permit, we must open a vein; or, if not, we may cup, proportioning the evacuation of the blood to the powers of the patient. Let draughts of the juice of ptisan, or of chondrus with

*The seven books of Paulus Aegineta. Translated by F. Adams, London, The Sydenham Society, 1844.

honey, be taken, or four bitter almonds with semilago, or chondrus having some sweet potion mixed with it, such as hydromel, apomel, or hydrorosatum. Fresh butter to the extent of three spoonsful is proper also. The patient must also drink the pro-poma of the decoction of figs with hyssop, or of iris boiled in honied water, or of powdered iris, to the amount of two spoonsfuls sprinkled upon honied water. This also evacuates downwards. To keep up the strength, he should be made to drink frequently of honied water alone, and with pine nuts and the seed of cucumbers. And cupping instruments and the cerate of privet, having some iris sprinkled upon it; or the cerate of the oil of rue and dried iris, or that made of wax and rosin, marrow, butter, hyssop, dried iris, and nard ointment may be applied to the whole chest and side."

Aretaeus gives a minute account of the disease. He remarks that as the lungs have but small nerves, there is little pain unless the investing membrane be affected. His directions for treatment include copious bleeding (avoiding deliquium), purging, attenuant and diluent drinks, rubefacients containing mustard, to the chest, alkaline substances, such as soda, given in the decoction of hyssop; and when the fever has subsided, to allow wine devoid of astringency.

Aetius, and Alexander Trallianus, physicians of great repute in the sixth century, follow Aretaeus closely in description and in treatment.

The Arabian physicians, Rhazes and Avicenna, who flourished in the ninth and tenth centuries, treat the disease like the Greeks. Avicenna was perhaps the first to state that sanguineous expectoration is met with only in pneumonic fever.

The Alexandrian physicians of the twelfth century add practically nothing that is new, but quote approvingly from Rhazes.

Down to the time of Sydenham (1624-1689) few new observations were made, and the teachings of the Greek and Arabian physicians were more or less closely followed.

Sydenham added to his knowledge of Hippocrates, the results of his own experience and observation, and cool, clean, almost unprejudiced by the observations of others, he opened a new era in medicine. His aim was to aid the forces of nature, and this is well shown in his careful instructions as to diet and the general care of the patient.

Sydenham's treatment is best given in his own words which follow his discussion of the cause and phenomena of pleurisy and peripneumony. (I have noted earlier that he felt that these could **not** be differentiated.)

“In order therefore to cure this disease, I have the following ends in view: (1) To check the inflammation of the blood; and 2) to make a revulsion of the inflamed particles, fixed upon the pleura, by proper evacuation. Depending therefore chiefly on bleeding, as soon as I am called in, I order about ten ounces of blood to be drawn from the arm of the affected side, and the following draught to be taken immediately after the operation.

Take of the distilled water of red poppies, four ounces.

The salt prunella, one dram.

Syrup of violets, one ounce.

Mix them together for a draught.

“At the same time I prescribe the following emulsion:

Take blanched almonds, seven.

The seed of melons and pumpkins, of each half an ounce.

The seeds of white poppies, two drams.

Beat them together in a marble mortar, then pour in by degrees a pint and a half of barley water, mix them well, and when strained add two drams of rose water and half an ounce of white sugar.

Let four ounces be taken every fourth hour.

“I also ordered pectorals to be taken frequently, e.g.:

Take of the commoner pectoral decoction, a quart.

Syrup of violets and maidenhair, of each one ounce and a half.

Mix them together for an apozem, of which let half a pint be taken three times a day.

Take of fresh oil of almonds, two ounces.

Of maidenhair and violets, of each an ounce.

White sugar, half a dram.

Mix them together and make a linctus according to rules of art.

A small quantity of this is to be swallowed leisurely often in a day.

Fresh oil of sweet almonds, alone, or linseed oil, is also frequently used with great advantage.

As to diet, I forbid all flesh meats and the smallest flesh broths and advise the patient to sup barley broth, water gruel, and panada, and to drink a ptisan made of pearl barley, sorrel and liquorice roots, etc., boiled in water, and sometimes small beer. And I also prescribe the following liniment:

Take of oil of sweet almonds, two ounces.

Pomatum and ointment of marshmallows, of each an ounce; mix together for a liniment, with which let the side be anointed, morning and night, applying a cabbage leaf thereto.

"I direct the above-mentioned remedies to be continued the distemper throughout.

"On the same day (the first of my attendance), if the pain be very acute, I order as much blood to be again taken away; or else the next day, and so the third day; and if the pain and other symptoms rage severely I bleed in this manner four days running. But if (1) the disease be less violent and dangerous, and therefore allows me to proceed in a gentler manner; or if (2) the patient be too weak to bear repeated bleeding at such short intervals, then, after bleeding twice, interpose a day or two between every bleeding afterwards. I have seldom known a confirmed pleurisy cured in grown persons without the loss of about forty ounces of blood. In children, however, it is generally sufficient to bleed once or twice.

"I either refrain from clysters entirely, or order only simple ones of milk and sugar.

"To prevent the patients being overheated during the continuance of the distemper, I allow him to sit up a few hours every day, as his strength will permit; which indeed is of such moment here, that if he be kept always in bed neither the plentiful evacuations of blood, nor the most cooling remedies, will sometimes at all avail in conquering the symptoms above specified.

"Immediately after the last bleeding, and sometimes before, all the symptoms abate, and the patient soon recovers his former strength, when it is proper to give some gentle purgative, and he should be debarred for some days longer from gross foods, and all kinds of spirituous liquors."

His treatise on treatment closes with the remedy for puncture of the tendon which he says often occurs in country towns when the procedure is undertaken by unskilful operators.

Richard Morton (1635-1698, one of the first English authors to lay stress on the contagiousness of phthisis) was an ardent opponent of Sydenham, and highly extolled a heating system of treatment, by which he cured the sick with as great success as did Sydenham with his antiphlogistic methods.

About the same time (1689) Gideon Harvey published a work on "The Art of curing diseases by expectation." The expectant method became later a recognized treatment, though not generally accepted. Harvey is notable as the writer who published scathing as well as satirical articles against the physicians of the day. In one he divides them into six classes: Ferrea, asinaria, jesuitica, aquaria, laniaria and stercoraria,

according as their favorite systems of treatment were the administration of iron, asses' milk, cinchona, mineral waters, venesection, or purgatives; or again designating them "dung-doctors, who drive out diseases through the anus."

Cullen (1712-1790) in his *Practice of Physic* advises that bleeding be performed in the arm of the affected side, and that it should be as large as the strength of the patient will permit, staying the procedure if the pain and dyspnoea are relieved, otherwise continuing to the onset of syncope. Repeated venesection he found beneficial, and abstracted usually four to five pounds in the course of two or three days. Should it be deemed unsafe to abstract more blood, then in case the pain is unrelieved scarification and cupping is to be done. He advised the use of cooling laxatives and kept "the belly open by frequent emollient clysters."

Laennec recognized that pneumonia frequently terminated favorably by crisis when untreated, and even when repeated venesections had been employed without benefit. He usually advised moderate bleeding (24 to 36 oz.) at the onset but did not urge repeated bleedings as was the practice in England and in Italy. Venesection was to be avoided if both heart and pulse were weak, also in old persons of a cachectic habit, and in patients recovering from other illness. The extent to which blood letting was carried is astounding. Forbes in his fourth English Edition (1834) of Laennec, remarks that the amount mentioned by Laennec may be detracted twice or even thrice within twenty-four hours in the beginning of the disease, not only with safety, but with unquestionable benefit; and that it is only in the more advanced stages of the disease that greater caution is necessary.

Andral says that the first bleeding should be from 16 to 20 ounces, and that the operation may be repeated twice or even thrice within the first twenty-four hours.

Chomel (*) says 12 to 16 ounces, repeated within a few hours to the third time on the same day.

Renauldin (†) recommended bleedings of 2 to 3 lbs. repeated every 12 hours.

In the *Edinburgh Medical Journal* (Vol. xiii, p. 165) we find record of fever being treated in seamen by the abstraction of 50, 60 or 70 ounces of blood at the first bleeding, up to 100 ounces within first twelve hours, and upwards of 250 ounces in the course of three or four days.

*Dict. de Med. Vol. xvii, p. 243.

†La Clinique, Vol. i, No. 20.

Forbes relates one case where a man was bled to 84 oz. at one bleeding, in an attack of fever, "without suffering syncope, or any ill-effect except great disorder of the circulation for some hours afterwards."

The Italians at the beginning of the 19th century were also free letters of blood. Acerbi (*) in his work published in Milan, 1819, states that of one hundred and forty-two cases treated by him, more than thirty were bled from ten to twenty times, each bleeding being twelve ounces; and that the usual practice was to bleed night and morning, so that in the course of eight or ten days from fifteen to twenty pounds of blood were taken away.

Up to the close of the eighteenth century much importance was placed upon the particular vein to be opened, the preference being given to that of the affected side.

As late as 1840 we find Grisolle† taking objection to the free bleeding practised by M. Bouillaud and arguing that his (Bouillaud's) series of cases bled to a mean amount of four pounds five ounces, showed no better results than Grisolle's with an abstraction of a mean amount of two pounds seven ounces. And as late as 1871 we find Walshe‡ unable to get away from the influence of medical opinion. He was evidently satisfied that bleeding was but rarely useful, yet apparently did not dare to come out boldly. He took the middle way.

"For my own part, while formerly often recommending abstraction of blood, in adult sthenic cases, to the amount of eight or ten ounces, with occasional re-venesection to the amount of six or eight, I have within the last few years been even more sober than this in the use of the lancet,—a single bleeding of six or eight ounces appearing to me sufficient. But I desire it to be understood, I by no means deny that larger abstractions of blood might not be beneficial in the robust and stalwart inhabitants of the rural districts. My sphere of practice has been too purely metropolitan to warrant me in dogmatising concerning the country." "Why has the practice fallen into disrepute?" "We are simply in a period of re-action from the excesses of the Sangrado School. We have learned from our predecessors the evils of *overbleeding*,—and seem, in my opinion, very much disposed at the present day to learn from ourselves the evils of *under-bleeding*."

DERIVATIVES.

At the close of the 18th and beginning of the 19th centuries

*Forbes Laennec 4th English Edition, 1834, foot note, p. 224.

†Traité pratique de la Pneumonie, Paris, 1841.

‡Diseases of the Lungs, 4th edition, London, 1871.

most physicians considered blisters as being, after venesection, the most efficacious remedy in pneumonia. They were not applied, in the first instance to the chest, but to the legs, thighs, or inside of the arms. When they failed to act as derivatives, they were supposed to act beneficially by exciting, temporarily, the powers of the system, thereby rendering admissible further bleedings. Sinapisms, too, were supposed to act in the same way but in a less degree.

Laennec considered blisters and similar applications injurious when applied to the chest during the acute stage, but recommended them in delayed resolution.

ALKALIES AND ATTENUANTS.

The alkalies e.g. subcarbonate of soda potassium or ammonia, soap, the sulphates of soda and potassium, were given by the ancients to render the blood less plastic. Mascagni in the latter part of the 18th century revived this treatment in Italy, partly from notions regarding the visciduity of the blood, partly from observations on the solvent effect of alkalis in gravel, and from observations on the softening of hepatized portions of lung when placed in such solutions. One to eight drams of Potassium Carbonate were given in half a pint of water daily. Darwin criticized this treatment and asked whether neutral salts might not augment the cough by their stimulus as they increase the heat of urine in gonorrhœa?* Laennec considered this treatment of little use but occasionally prescribed the salts toward the termination of the disease, or when becoming chronic.

PURGATIVES AND EMETICS.

These were used freely with the view of lessening the congestion within the chest, or from the inflammation being complicated with bilious disorder. Corvisart used them constantly in conjunction with blood-letting, in the beginning of the disease.

TONICS.

Wine and bark were frequently prescribed. Laennec considered cinchona the best remedy when gangrene of the lungs developed, giving an ounce daily. In several cases when the acute stage had begun to subside he continued the use of the sulphate of quinine for more than a month to the extent of eighteen grains in the twenty-four hours.

CALOMEL AND OPIUM.

These drugs, separately or combined were extensively used in England and were considered powerful auxiliaries of the anti-

phlogistic treatment. They were probably first recommended by Dr. Robert Hamilton in 1785.* His practice was after bleeding and opening the bowels, to give "a composition consisting of from five to one grain of calomel and from one to one-fourth grain of opium, every six, eight, or twelve hours."

Dr. Armstrong† expresses the opinion that Hamilton's precursory depletion is too slight, and the doses of calomel too small or too seldom repeated.

Williams‡ stated that the efficacy of this combination depended in a great measure on its being given to such an extent as to affect the gums.

TARTAR EMETIC IN LARGE DOSES.

Rasori in Italy and Laennec in France strongly advocated the use of this drug. Their dosage seems to us to be large, but it was slight compared to the method of Riverius and others in the seventeenth and early part of the eighteenth century who vomited their pneumonic patients with it every day or every second day.

Laennec after bleeding, gave one grain well diluted every second hour for six times. In some cases the dose was two or two and one-half grains. This would usually cause his patients to vomit twice or thrice and have five or six stools the first day. If this continued the symptoms were relieved by two ounces of syrup of poppies given in each twenty-four hours, on the following day 9 grains of the salt were usually given, toleration established, and the remedy was continued until complete resolution was established.

Rasori§ seldom gave less than twelve grains during the day, and as many during the night. If the disease was well advanced he began with twenty to thirty grains, increasing the dose daily until it amounted to a drachm or even several drachms in the course of twenty-four hours.

REGIMEN IN PNEUMONIA.

Laennec's practice was to debar the patient during the acute stage from every kind of aliment except sugar and the mucilaginous matters which entered into the composition of his drinks, to feed carefully during convalescence remembering that a sick man may die of starvation as well as a healthy one. He avoided great heat in the sick room, insisted on proper ventilation of the chamber, and avoided heavy covers on the patient.

*Medical Commentaries, Vol. 9, p. 199.

†On Typhus, 2nd Edition, p. 244.

‡Cyc. of Pract. Med., Vol. III, p. 442.

§Archives General de Medecin, 1824.

CHLOROFORM INHALATIONS.

About 1850 Varentrapp, Wucherer and others employed chloroform having the patient inhale 60 minims placed on cotton, for ten or fifteen minutes and the dose repeated every 2 to 4 hours, avoiding unconsciousness. They reported about 1 death in 25, and by other methods 1 in 7. They did not however include severe cases.

The heroic treatment of the disease by blood-letting, mercury, tartar emetic received little check until the results of Skoda and the Homœopathic hospital in Vienna became known. Dr. G. W. Balfour* and Sir John Forbes, through their communications reported this work in Britain. Here was shown results far better than those published by the men who were using the drastic treatment then in vogue. Much comment was made, so that the profession became wide awake to the situation which had to be faced. Either there was some great virtue in the little granules and infinitesimal doses given by the homœopathic physicians, or by giving the patient nothing, the proportion of recoveries was much increased. It was a difficult dilemma.

About the same time Hughes Bennet placed before the profession his splendid results attained through simple measures, the aim of which was to assist nature.

Gradually the profession began to realize that the course of the disease was but little influenced by medicine, and that a careful regimen was most important. The belief in drug giving died hard, in fact there has always been a large class who believed that the disease could be cut short. Walshe proved to himself that treatment was beneficial, in that of the patients seen early in the attack, a greater proportion recovered than of those seen when its course was more advanced. "There are periods of life at which it is next to impossible to save—there are periods of life at which it is not easy with common prudence, to lose a sufferer from idiopathic and ethenic pneumonia" and dealing with Skoda's results he says, "It is a disease which may, and actually has been therapeutically played with—and this with seeming impunity to the sufferers when they had youth on their side. We have just seen the extent to which a series of Skoda's patients escaped death by being left to the devices of Nature."†

I need only mention how in the past few years a host of vaunted specifics have been heralded through the medical press. Flint once claimed that quinine in 20 to 40 grain doses would abort pneumonia. Schwartz claimed that iodine was a specific,

*British and Foreign Med. Review, Oct. 1846, p. 591.

†W. H. Walshe, Diseases of the Lungs, 4th Edition, p. 374.

and at different times veratrum vinde, carbonate of ammonia, ergot, salicylates, soda benzoate, creosote carbonate and other drugs have claimed this distinction. Only a few years ago, large doses of whiskey or brandy, exhibited throughout the course of the disease, were considered essential. To-day the vaccines and serums are shown by some to cut short pneumonia or render its course more favorable.

The literature of pneumonia offers proof of many of these contentions, *e.g.*, Louis shows that those bled within the first four days recover four or five days sooner than those bled at a more advanced period, and Jackson of Boston proved (?) that by bleeding on the first day, the mean duration, in a mass of cases at the Massachusetts Hospital, was lowered from 14.6 to 11 days!*

Before we condemn the public for their great faith in a well advertised patent medicine, let us remember the attitude of the profession in general toward any highly lauded new treatment. "At first it seems to be wonderfully effective, then as cooler and conservative men report it falls into disrepute and is soon forgotten."† The generally accepted treatment of to-day I will not now discuss.

What have been the results of the various methods in use at different periods. The Statistical method of inquiry in medicine began with Louis. Before his time we have only the expressed personal opinions of various writers. Perhaps many of the figures presented since Louis offer little else, so often are they offered in proof of an opinion, instead of being the source of opinion.

Hippocrates and the ancient writers considered the disease a formidable one with high mortality. Sydenham looked upon it as more dangerous than most other fevers but easily conquered by proper treatment.

When we begin to delve into the statistics of various methods of treatment we are at once confronted with the rather remarkable statements made by the partisans of any special method. What can one desire more than the results of Laennec?‡ "Of 57 cases treated by the tartar emetic, only two individuals both upwards of seventy, died of this disease complicated with cerebral congestion, that is a little less than one in twenty-eight. In private practice, I do not remember a single case which proved

*Louis on Blood Letting, Putnam's American Edition, Boston, 1836.

†Conley—St. Paul Med. Jour., Vol. VI. p. 690.

‡Fourth English Edition, 1833, p. 235.

fatal under the use of the emetic tartar, except that of a plethoric subject, aged seventy-two."

Rasori (1808-10) treated 832 cases, of which 173 died, 22 per cent. in the civil hospital and 14 per cent. in the military.

RESULTS OF TREATMENT BY LARGE BLEEDINGS.

Under this heading Hughes Bennet reports 648 cases treated in the Edinburgh Royal Infirmary of which 222 died, about 1 in 3.

Louis reported that of those bled early, 1 in 7 died, of those bled late, 1 in 3 died.

Bouillaud, who bled repeatedly, reported a death rate of 1 in 8.

Grisolle who bled only in the early stage a rate of 1 in 10.

Dietl treated 85 cases by large bleedings with death rate of 1 in 5.

The British Army reports for 1853 showed a rate of 1 in 13. (Young and vigorous subjects, bled early.)

BY TARTAR EMETIC.

Rasori in Milan treated 648 cases with 143 deaths or 1 in $4\frac{1}{2}$. Dietl treated 106 cases with 22 deaths, or 1 in 5.2.

BY DIET AND REGIMEN WITH LITTLE DRUGS.

Dietl reported 189 cases with 14 deaths or one in $13\frac{1}{2}$.

Bennet reported 1 death in 32 cases, and in 105 uncomplicated cases, no deaths.

Bennet's results had a great influence upon treatment in England and America as well as through Europe. He taught that Acute Pneumonia, uncomplicated, is not a fatal disease if the strength be supported and there be no complication, that the numerous remedies given when not injurious, are for the most part inert, and exert no influence on the progress of the disease.

Wells* who has made an exhaustive study of the prevalence, geography, epidemics, mortality of pneumonia, and has tabulated some 500,000 cases, considers there has been no lessening of the death rate, though recognizing the increased occurrence of the disease. He places the mortality at about 20 per cent., and is of the opinion that this has been the general average for a long period of years.

Townsend and Cooledge† give the record of 1,000 consecutive cases treated at the Massachusetts General Hospital from 1822

*Trans-American Climatological Assn., 1889, p. 22.

†Journal Am. Med. Ass'n., 1889.

to 1889. The mortality recorded according to decades varied from 9 to 14 per cent. (they did not include patients over 50 years of age, those who were intemperate, delicate or who had complications) and could find no material change in results whether treated by bleeding, purging, salivation, blistering, expectant, or the symptomatic treatment of our own day.

There can be little doubt, that, with all our improved methods of research, and we believe better methods of treatment, pneumonia is rapidly increasing and that the death rate is in no wise reduced.

611 Spadina Ave.

INTUSSUSCEPTION — RECENT RESULTS AT THE HOSPITAL FOR SICK CHILDREN

F. N. G. STARR, M.B. (TOR.).

Surgeon to the Hospital for Sick Children, Toronto.

Writing in Burghard's System of Operative Surgery, Makins says: "An intussusception of any form or variety demands an abdominal section at the earliest possible moment after its detection. Treatment by inflation or injection is always untrustworthy and generally useless."

In the majority of cases this certainly is true, but when one sees a case early and makes a diagnosis promptly, before secondary inflammation has occurred, surely there are some cases that can be relieved without operation?

I have seen three such cases: one in a boy of six years, one in a babe of three months, and one in a child of fifteen months. In each case there was sudden pain in the abdomen, followed by vomiting, a desire to go to stool, straining, and bloody mucus was passed by the bowel. There was also the abdominal facies.

Upon examination, in from half an hour to three hours after the onset of the symptoms, a sausage-shaped mass was to be felt within the abdomen. In every case the patient was suspended by the feet and continuous irrigation, with a fall of about four feet, was used, while the surgeon employed taxis upon the mass within the abdomen. After the mass had diminished in size, it suddenly disappeared, and was immediately succeeded by an explosion of gas from the rectum, followed in one instance by corn, in another peas and in the third by flocculent faecal matter.

The after treatment consisted in the administration of paregoric and abstinence from food for twenty-four hours.

The majority of cases, however, come to operation, and if more than five or six hours have elapsed since the onset of symptoms *it is not safe to waste more time by trying to secure reduction by injection and taxis.*

Doctor Morgan, House Surgeon at the Children's Hospital, has kindly made excerpts from the records of the hospital for the past two years. We find that there were eleven cases of intussusception for which operation was done, and of these seven were males and four females. The ages varied from three months to seven years. In all but one the *onset was sudden, with crying and pain*, but the feature upon which most importance was

placed by the parents was the *bloody mucus* in the stools, and this was present in all but one case. There was *vomiting* in all but two cases. The duration of symptoms varied between three hours and seven days. A *tumor* was felt in all but one case. *Rigidity* was absent in all. Nine out of the eleven cases recovered, and in the two fatal cases the patients were almost in extremis at the time of operation, one having been ill for four days and the other for three days. In both these cases it was impossible to reduce the intussusception and an artificial anus was hurriedly made, in the hope of saving life, when a resection might subsequently have been done.

The case in which the onset was gradual was a babe six months old, which was brought to the hospital for a tumor protruding from the anus. The case was recognized as one of intussusception, and although symptoms had been present for seven days, the bowel was easily untangled when the abdomen was opened.

The case, aged 7, in which no tumor could be definitely made out, and in which there were no bloody stools, was a peculiar one, in that, upon opening the abdomen a small intussusception was found in the ileum about four inches above the cæcum, which was easily reduced. I then noticed that the ileum above this was very small, and upon searching further I found a second intussusception about two inches long and not quite so easily reduced. That was in January of this year, and since then I have operated twice in another hospital upon the same child for intussusception. On each of the latter occasions the condition occurred a few inches higher up the ileum. From the last operation, a few weeks ago, she did not recover. I rather think a recurrence of the trouble took place, but an autopsy was not permitted, the parents assuming that I knew all there was to know about that child's interior, for in March, 1909, I had operated for the relief of an internal hernia.

These are the records of a few cases of intussusception, and from them we may learn some valuable lessons:

1. The diagnosis must be made early. The chief points to be considered are: *Sudden pain*, with *absence of rigidity*, *vomiting*, *frequent desire to stool*, resulting in the passage of *mucus tinged with blood*, often great prostration and usually the presence of a tumor.

You will observe that I have mentioned nothing about the pulse or temperature, and my reason for so doing is that it often happens that too much weight is given to the temperature and pulse, and as a result lives are sacrificed. If the temperature

happens to be elevated the case may be looked upon as an intestinal toxæmia until it is too late to operate, whereas if it is normal—as is so often the case until secondary poisoning occurs—the case may be mistaken for an ordinary infantile colic and valuable time may be lost. There are a few other important things in this world besides the temperature and pulse, and our eyes, our hands and our ears were given us in order that we might perceive and know them. It was intended that we should use all of these faculties or we would have been born without them.

2. As to the treatment. If an injection properly given, with the child suspended by the feet while taxis is practised, can be effectual—and I think I have demonstrated that it can if the case is seen early—then I think it is our duty to try it. If it does succeed the water used will be forcibly ejected, along with gas and either fæces or some indigestible material. If this fails, do not wait a few hours, but immediately prepare for an abdominal section.

Upon opening the abdomen find the intussusception, run the fingers rapidly along it till the apex is found, then with the finger and thumb, gradually strip or milk this back toward the cæcum; when one comes to the neck or point of greatest constriction. Grasp this firmly, if there is any difficulty, and endeavor to squeeze out some of the œdema from the intestinal wall, when the intussuscepted portion will readily slip back. It is perhaps wise then to put a stitch or two in the cæcum to fix it, with the view of making its attachment approach more nearly to that of the adult cæcum. I think it is important also to secure the point in the mesentery at which the invagination began and make a fold in it, so that at this damaged point there will be an enlargement instead of a constricted part, thus preventing a recurrence of the trouble. The operation must be done rapidly, with as little exposure and as little handling of the intestine as possible.

If, as sometimes happens, it is impossible to relieve the condition, I still think the safer plan is to make an artificial anus, with a view to a subsequent resection, rather than attempt a resection at the one sitting. An enterostomy, with a Paul's tube in each end of the intestine, may be a substitute.

The secret of success, however, is an early diagnosis, and a consequent early release of the bowel.

THE HYGIENIC, DIETETIC AND MEDICINAL TREATMENT OF TUBERCULOSIS*

BY W. J. DOBBIE, M.A., M.D.C.M.

Physician-in Chief, Toronto Free Hospital for Consumptives.

The treatment of pulmonary tuberculosis is a large subject, and one in regard to which there is much room for difference of opinion. Certain principles, have, however, become by experience well established, and it is in regard to these particularly that one may venture to speak on such an occasion as this.

In days which can be readily recalled, when a case of tuberculosis was treated, the prescription was whiskey, cod liver oil, morphine, and long walks in the open air. When, for more or less obvious reasons, a physician cared no longer to take the responsibility of such a case the advice was "Go West" or "Go South." And even at that many cases recovered. It would be strange then if, in a disease with such a strong tendency to recovery, modern methods of investigation, and modern clinical experience, could not reveal something that would be of material assistance. And while we must admit that as yet we know of no drug, nor series of drugs, no special serum, no antitoxin which is specific, there is much that is known that is both helpful and encouraging.

The treatment of tuberculosis aims at the establishment of an immunity on the part of the infected organism to the tubercle bacillus and its toxins, and in this respect tuberculosis is not different from other diseases of bacterial origin. And for the production of this immunity there are two methods of procedure—first, *indirectly*, by improving the general condition of the patient by placing him in the open air, giving him nutritious food, and teaching him how best to live, and second, *directly*, by artificially increasing the antibodies of the blood.

The various remedial measures might therefore be classed as follows:

(1) Those which aid in bringing about immunity, by restoring the natural power of resistance. Such are fresh air, proper diet, hydrotherapy, suitable tonics, etc.

(2) Those which aid in bringing about immunity by artificially stimulating the body cells to produce specific protective substances. Such as the administration of tuberculin.

*Read at the Saturday Clinic at the Orthopedic Hospital, Toronto, 28 January, 1911.

(3) Those which aid in establishing immunity by supplying specific protective substances. Such as antitoxic sera.

(4.) Those which aim at bringing a greater quantity of antibodies in contact with the bacilli. Such as Bier's Hyperemia, Finsen Light, heliotherapy, poulticing, and the local congestive action of tuberculin.

(5) Remedies and special measures for the relief of definite symptoms.

(6) Measures whose aim is to control any secondary infections which may be present.

The treatment of tuberculosis is not a simple matter. It requires some degree of skill, great resourcefulness, and an intelligent application of general principles to individual cases. Fresh air is of some value, but fresh air properly applied is of much more value; hydrotherapy is useful, but it must be suited to the patient and the disease; tuberculin must be given to suitable cases, at the proper time, and in the proper dosage. In short, the physician who treats tuberculosis should be conversant with all methods of value, should appreciate fully their limitations, and should know how to employ them with skill and intelligence.

Classes of Patients.—Tuberculosis having then been diagnosed, the question as to what is to be done with the patient at once arises. In answering this query three classes of patients may be considered. There are first those so ill that they are unable to properly care for themselves. These must be provided for either at home or in a hospital. If adequate provision cannot be made for them at home, there should be no question as to their being sent to a hospital. On the other hand, those who are physically able to care for themselves fall naturally into two groups (1) those who have been educated as to the nature of their disease, the means to be adopted to prevent its spread, and the proper routine of life to best further improvement, or hasten the curative process, and (2) those who have not been so educated. The former of these two groups can very well be cared for almost anywhere. The latter should be sent to a hospital or sanatorium in order that they may receive instruction. For it will generally be conceded that suitable instruction can be given to better advantage in an institution than elsewhere.

Fresh Air.—Wherever the patient may be placed, however, the first essential is fresh air, because in the treatment of tuberculosis it has come to be considered a *sine qua non*. It is not, however, in any sense a specific. It is a tonic, improving at once digestion and assimilation, allaying nervous excitation,

inducing sleep, and generally stimulating the normal physiological processes of the organism, and thereby producing an improved state of nutrition. Its use must not, however, be abused. In this climate great judgment must be used, especially in the winter season, because "fresh air" is not synonymous with "cold air," and the extent to which the latter may be tolerated must be determined largely by the vitality of the patient. Senseless exposure must be avoided. In cities resource must be had to various devices. The verandah where the patient can live, eat and sleep is by far the best, but a balcony, back yard, or even a roof, may be utilized. A room properly ventilated is quite satisfactory, although in most houses "proper ventilation" is an almost unknown quantity.

Climate.—Formerly climate was considered to be a very important factor. Without any consideration being given to any other circumstances, patients were sent here or there as the preference of the physician determined. And while it may be admitted that if fresh air is of value it is an advantage to "take the cure" in a climate where the maximum amount may be had with the minimum of discomfort, and that if sunshine is beneficial it is better to have twenty-five days of it in the month than a dozen or less; nevertheless, inasmuch as a change of residence involves a considerable expense to be continued over a long period, the separation of the patient from family, friends and familiar surroundings, from home comforts, and from possibly the source of his income, it is doubtful if, in the majority of cases, the advantages to be derived are commensurate with the cost.

It is gratifying, therefore, to know that good results can be obtained in those cases in which a change of climate is not a possibility. In point of fact, in most cases the question of climate need not be considered at all, because about 98 per cent. of all tuberculous patients have, of necessity, to be treated at home. The large majority of the cases of tuberculosis in the City of Toronto, for instance, have to be treated in Toronto or its immediate vicinity, and attention need only be given, therefore, to the other factors in the care and treatment of these cases.

Rest.—Perhaps the most important remedial measure is Rest, which may be described as that condition in which the physiological functions are carried on with the least expenditure of energy. There is, thereby, conserved the greatest amount of vital force with which the progress of the disease may be combated and the process of repair carried on. It is a safe rule to follow that every case should be put at rest at the beginning

of treatment, while the general condition of the patient is being studied. And the safest clinical guides as to whether a patient should be confined to bed or not are the temperature and pulse. If the tubercular process is acute and progressive, rest is imperative. Patients with a temperature of 100 F. and a pulse of 120 or more, should be confined to bed. If the temperature is consistently below 100 F., and the pulse of good volume and tension, the patient may be allowed to spend eight or ten hours a day in a reclining chair. Some advocate a much stricter rule, viz., that whenever the temperature reaches 99 F. there should be absolute rest in bed; but this would not seem to be necessary nor advisable. As in other things, there is a happy mean. But, on the other hand, rest should not, as is sometimes the case, be continued too long, nor should the patient be restricted in the minor activities associated with the toilet, meals, etc., because it is to be noted that even when comparatively strict rules cannot be followed, incipient cases, and even those moderately advanced, sometimes make good progress. This is the case because rest is only one of many things to be considered and insisted upon in the *régime* of the consumptive, and one has always to be on the alert to preserve a proper relative proportion in the attention which is paid to each particular part.

Exercise.—For while, no doubt, there is the least expenditure of energy when the patient is at rest, it is also true that even in health a certain amount of exercise is necessary to maintain a physiological balance. In a tedious disease such as tuberculosis this point must not be lost sight of in the treatment. Nor is it permissible to forget that no case can be considered cured or arrested until an ordinarily active life can be resumed without the onset of symptoms. And it is just here, if one might venture to say so, that a mistake is made in many sanatoria. Patients live for months amid ideal surroundings, and then return to the ordinary conditions of home life, only to find themselves ill-prepared to stand the strain of less favorable circumstances. Patients who have improved should be returned gradually to the conditions of, shall we say, a reformed ordinary life. It is, therefore, for these reasons that exercise is indicated. And the exercise should ultimately be such as to prepare the patient for the kind of work which it is necessary for him subsequently to do. Elaborate systems of exercise have been devised, but many of them are lacking in the greatest essential—that they be related to the actual conditions of life. For example: In the case of a woman who has to return to the care

of a house, it is much better that she be taught to use discretion and judgment in the amount of exercise which she can take in the matter of sweeping and dusting, the making of beds, and the washing of dishes, than that she be skilled in carrying loads of dirt or in the walking up and down an incline while "on exercise." She must, in fact, be taught to measure effort in the ordinary exercises of life, rather than in the artificial gymnastics of the sanatorium. And this is not difficult of accomplishment, in that the same amount of thought expended would suffice to devise a system of graduated work quite as suited to the immediate necessities of her case, and productive of much more in the way of education and the development of judgment concerning the ordinary, and, in many cases, the necessary activities of life. Therefore, in a general way, it may be said that, while graded walks may be one of the first exercises for the consumptive, they are not necessarily always the best, nor should they be continued when the condition of the patient warrants other exercises being given.

Amusements.—As to amusements, it may be said that they are seldom to be recommended as exercise. Patients should be taught that their exercise should be had in doing those things that are necessary or useful, and that their amusements should be such as give "Rest."

The chief contra-indications to active exercise are: (1) Fever, (2) Rapid Pulse, (3) Blood in Sputum, (4) Loss of Weight. In a general way, patients with a temperature above 99 F., or a pulse rate of 100 or more, should have no exercise, and a simple guide to give the patient after an apparent recovery is that there should always be "Much Rest and Some Exercise."

Diet.—Following Rest and Exercise, there comes the important subject of Diet, and in its consideration there is much need for the use of common sense.

For some years it was the generally accepted belief that "forced feeding" was one of the essential points in the treatment of tuberculosis. Forced feeding was interpreted by many to mean the consumption of enormous quantities of food. And it is not uncommon, even at the present time, to hear some patients boast that they drink four to six quarts of milk and eat ten or twelve eggs, in addition to three large meals each day. Now it does not require a very great deal of thought to demonstrate that this method is not only not scientific, but that it is not even based on common sense. It is not the quantity of food consumed that counts, but the amount assimilated. Pa-

tients who commence with "forced feeding" usually end with impaired digestion or an irritated and irritable gastro-intestinal tract.

No general rule can be made which will satisfactorily cover all conditions, since each case must of necessity be considered on its merits, but it may be held that, by a proper appreciation of the end in view, on the one hand, and with a fair knowledge of the means at hand for accomplishing that end, on the other, much can be done to provide patients suffering from tuberculosis (and others suffering from poor nutrition) with a diet such as is suited to their needs. So much original work has been done in recent years along the line of food values that there is little difficulty in making a practical application of the available information concerning foods and their relative values for different purposes. In institutions, of course, the best opportunities are afforded for the application of recognized principles of diet. There the kind of food required by each individual is not difficult of determination after observations have been made for some weeks, and to plan a special dietary containing suitable food in proper quantities, is comparatively easy. The greatest difficulty is to get people to realize the importance of paying strict attention to details. Advice as to which articles of food should be avoided and which consumed freely is often disregarded. But the practical value of such a careful supervision, not only of the general dietary, but also of the kinds of food and the amount of each kind best suited to the individual, is everywhere being recognized. At the Toronto Free Hospital for Consumptives some observations were made recently, extending over four periods of six weeks each. These revealed the fact that the average gain per patient in six weeks increased from 2.9 lbs. in the first period when there was no supervision of diet, to 3.8 lbs. in the second period, when there was a more or less complete supervision of the general dietary. In the third and fourth periods, when there was, in addition to a general supervision, a careful consideration of individual needs, the average gain per patient for each period reached 4.46 lbs.

In combating tuberculosis the aim is to furnish the patient with the most nutritious general diet, with liberal proportions of proteids and fats. In this disease the constant tendency to loss of tissue makes the importance of proteids evident. Proteids, however, are assimilated with difficulty by the body, and it is for that reason necessary to use the proteid-sparers, viz., fats and carbo-hydrates, to supply the heat and energy required, so that the proteid may be used entirely to repair tissue. Ex-

periments on tuberculous patients show that they should consume daily about:

4½ ounces of Proteids.

5 ounces of Fats.

10½ ounces of Carbo-hydrates.

Such amounts would be furnished by the following:

	<i>Proteids.</i>	<i>Fats.</i>
Meat, 4½ ounces.....	1 ounce	½ ounce
One egg, 2 ounces	¼ ounce	1.5 ounce
Milk, 3 pints	2 ounces	2½ ounces
Porridge, plateful	1-3 ounce	
Bread, 8 ounces	1 ounce	
Butter, 2 ounces	Trace	1½ ounces
	4½ ounces	4½ ounces

This is just ordinary plain food with the addition of milk, and it is all that is required. Indeed it is unwise to recommend a diet which the circumstances of the patient make it impossible for him to procure. And it is also better to eliminate from the dietary all foods which do not nourish, such as fried foods, pastry, candy, and all rich dishes. Such instructions as the following may be given with advantage:

Diet.—The food which you eat is an important part of your treatment. All foods are not of equal value. You should eat what is of value to you regardless of likes and dislikes.

Overfeeding is just as great a mistake as underfeeding. You require each day about 125 grams of proteid, 125 grams of fat and 500 grams of carbohydrate, producing in all from 3,000 to 3,500 calories of heat. The diet which will produce these amounts with the least effort is the best. Such a diet is the following:

Breakfast.—Six ounces of porridge, with milk, one slice of buttered toast, one slice of bread and butter, one slice of bacon, or one egg, or three ounces of steak, one cup of milk coffee, two glasses of milk.

Dinner.—Twelve ounces of soup, three ounces of meat, four ounces of potato, four ounces of vegetable, two ounces of milk pudding, two slices of bread and butter, two glasses of milk.

Tea.—Three ounces of meat, four slices of bread and butter and two glasses of milk.

Such a diet is a full diet. It should be your aim to eat as much as the above and no more. At first you may not be able to eat more than half of this quantity. Some other articles of food may of course be substituted, and a few others added, but these must always be regarded as the staples and of most value.

Chew your food. Do not drink with meals. Sip your milk slowly.

Lunches.—There should be no eating between meals. One or two glasses of water between meals are beneficial. One or two glasses of milk at bed time are permissible.

Unless for special purposes, when special diet may be indicated temporarily, favorable cases will not be allowed anything different from the above. If you are given anything not included in the above you may take it as an indication that your case is not considered a favorable one.

Alcohol has no place in the treatment of tuberculosis, because, in a disease in which the need for and the result of stimulation is so easily apparent to the patient, its use soon merges into a persistent abuse. For a long time it held a prominent place in the treatment of the disease, and has, no doubt, valuable properties, the beneficial effects of which prompted its use. It should, however, never be used as a food, should, as a medicinal agent, never be used continuously, and should only be used at all when a definite indication exists for it.

Cod Liver Oil shares with alcohol the result of persistent abuse. Formerly employed with the idea that it had a specific effect, its use is now chiefly as a food. While comparatively pure and relatively tasteless oil can now be obtained, it cannot be said that it is at any time really palatable, and while it is of some value when well tolerated, its place can very well be taken by butter, cream and bacon.

Medicinal Treatment.—On the subject of medicinal treatment much that is negative may be said and little that is positive. From time to time certain so-called “specifics” have been lauded, only to be found wanting after extensive trial.

The natural enthusiasm of the individual physician on the subject of the particular remedy which he is using makes it possible for many drugs to be looked upon with favor from time to time. It is to be admitted, however, that no medicinal substance has as yet been discovered which can in any sense be regarded as a specific.

Of the drugs of this class which have held a more or less prominent place in the past, probably none is better known than *Creosote*. Of it and its derivatives it may be said that, while they have no action whatever on the tuberculous process, they are of value in allaying accompanying bronchorrhœa and in pre-

venting and reducing gastric-intestinal fermentation. For these purposes small doses only are necessary.

Other drugs which have been tried are arsenic, alcohol, cin-
namic acid, various salts of calcium, iodine and strychnine. Of
all of these it may be said that while they probably have some
beneficial effects in certain cases, they have been generally over-
rated, and not only is there no specific known as yet, but the
medicinal treatment of tuberculosis is confined almost entirely
to the treatment of symptoms. Of these, some are of sufficient
importance to warrant some little attention. Indeed, some are
of so much importance that it has become the practice by those
having the widest experience in the treatment of tuberculosis to
take considerable pains to explain to the patient many things
pertaining to the symptoms of the disease in order that his co-
operation may be the more readily and the more intelligently
enlisted.

SYMPTOMATIC TREATMENT.

Fever.—Every patient should be taught to use a clinical
thermometer. He should also be given some information as to
the significance of temperature variations. For example, that in
a chronic case without complications in an inactive stage a tem-
perature range in the 24 hours from 97 to 99 or 99.5 is to be
expected. An increase of the maximum to 100 or 100.5 indicates
possibly only some indiscretion, or possibly a slight activity of
the disease process, while a rise to 101 F. or higher is of grave
import. The usual range of temperature in the 24 hours is from
about one degree in early cases, and in chronic, inactive cases, to
from 3 to 5 degrees when the disease becomes active, or even to
10 degrees in cases of the hectic type. A temperature running
persistently to 101 or higher, when neither the extent of the
lesion nor the existence of any complication warrants it, in-
dicates an infection of great virulency, or a constitution of low
resisting power.

The patient should be given also some explanation as to the
ordinary causes of fever, such as over-exertion, excitement,
coryza, constipation, etc., so that these may be carefully avoided.
By way of treatment the most efficient measure is adequate rest,
and the amount required may be said to vary directly with the
degree and persistence of the fever. A rise to 99.5 is sufficient
to contra-indicate all exercise except such as is incident to the
toilet, dressing and meals. Rest of course should, if possible,
be taken in the open air. Hydrotherapy is of value in some

cases, but is to be used with great judgment and caution. When the fever is very high, sponges with tepid water are refreshing. The diet requires attention. Unless the fever is due to gastrointestinal disturbance full diet should be given, because the fever rarely abates while the patient is losing weight. Medicinal remedies should, as a rule, be avoided, since antipyretics, while useful in a few cases, usually prove injurious.

Cough.—Concerning this symptom the patient should also receive instruction. There are two kinds of cough—first, cough which produces expectoration, and second, cough which does not. The former should be encouraged and the latter discouraged. Patients have an idea that if there is any mucus present they should cough until it is expelled. On the contrary, coughing should only be practised when absolutely necessary, because cough produces an injurious effect in several ways, viz., by delaying the process of healing, by wearing and exhausting the patient, and when severe enough to induce vomiting, by interfering with nutrition. A patient with an undesirable cough should be warned against over-exertion, rapid and loud talking, laughing, singing, rapid walking, running, and the like, as well as the inhalation of irritants, such as dry air, vapors, smoke and dust. He should be taught and encouraged to use his will power, because by that means alone 75% of all coughing can be eliminated. And this the patient must do for himself. In fact, it is only occasionally that the assistance of the physician is needed, and in those few cases sedatives should be the last resort. Determine if possible the cause, examine the pharynx and larynx. Try inhalations, sprays, or rest in bed. Of the opiates, codeine, gr. $\frac{1}{4}$, heroin, gr. 1-12, are the best, and morphine need only be used in the terminal stages.

Expectoration.—The object of treatment in connection with this symptom is to aid in the expulsion of sputum or to lessen its amount. The former of them is promoted by change of positions, hot drinks, inhalations, and alkaline expectorants. For the latter purpose creosote is indicated.

Hæmoptysis.—The best treatment for hæmoptysis is prevention. To this end patients should be taught the cause of hæmorrhage from the lungs, and instructed to be on the lookout for specks or streaks in the sputum. As soon as these are discovered treatment should begin. The cause is always increased pressure upon a weakened vessel wall. Prevent the weakening process by avoiding mixed infections. Nothing can be done to strengthen the wall, but much can be done to keep

the pressure within the vessel at or below a safe minimum. In the first place limit the volume of blood in the lesser circulation by keeping the skin protected from sudden chills, by the use of vasodilators, such as nitroglycerine and the nitrites, and provide free elimination. The diet should be non-stimulating, but not necessarily restricted, as a congestion on the splanchnic area would seem to be desirable.

If, however, a frank hæmoptysis occurs, it may be severe, and if from a ruptured aneurism, assistance may be of no avail, and death may follow very quickly. These cases are, however, comparatively rare.

Ordinarily the first duty is to calm the fears of the patient and his friends. Everything should be done quietly. The patient should assume the semi-recumbent position, because gravitation of the blood to the extremities is facilitated and expectoration aided. Ice to suck is grateful to the patient. If much blood is being lost, ligatures may be applied to the extremities and changed in rotation, one every 15 or 20 minutes. Little else need be done, and the cases are few in which the hæmorrhage will not speedily be under control. Subsequently, the administration of nitrites, free elimination, restricted diet and quiet are all that are necessary.

In the majority of cases morphine need not and should not be given, because, though it serves to quiet the circulation, relieves the cough, and so aids in the formation of the clot, it also produces areas of bronchopneumonia by locking up blood and secretions. For excitable patients, with a bounding pulse, and for those with a tendency to recurrence, it is, however, invaluable.

Various other symptoms, such as night-sweats, dyspnœa, tachycardia, pleuritic pains, gastro-intestinal disturbances, besides numerous complications, such as influenza, pleuritic effusion, empyema, pneumothorax, secondary infections, might be considered did time permit.

Of the importance of tuberculins and sera in the treatment of this disease, nothing will be said since this subject will be dealt with by Dr. Caulfield.

Of those methods which aim at bringing a greater quantity of antibodies in contact with the bacilli, only a word can be said. Attention has been drawn during recent years to the importance of hyperæmia in the treatment of disease, and while no method of applying this method to tuberculosis of the lung has been devised, which has been considered as generally acceptable, it

deserves perhaps a passing reference. Other methods also have been tried, such as directing the concentrated rays of the sun upon the chest by the use of mirrors, with the heat cut off by blue glass. It has been also attempted to bring about a similar condition by postural treatment.

In the matter of measures whose aim it is to control secondary infections which may be present it may be said that, while there is considerable difference of opinion as to the influence of secondary organisms on the course of pulmonary tuberculosis, it is by all means desirable that such infections should be controlled and, if possible, prevented. Serum and vaccine therapy demands attention, inasmuch as it is, to say the least, hardly rational to believe in tuberculin on the one hand and to neglect on the other hand the application of similar principles in the case of the secondary invaders. Creosote and its derivatives have been considered effective in some cases, as has also inhalation of vapor from carbolic acid. Without doubt the most important factor is prevention, and this may be accomplished by avoiding congested districts, and, in particular, persons carrying such micro-organisms.

One may perhaps be pardoned for referring, before concluding to two common mistakes that are frequently made. The first is in regard to the use of alcohol and the second in connection with the use of opium. As to the former, the great tendency which there is on the part of the patient to its abuse should be sufficient reason for the discontinuance of its use. It is but rarely beneficial. It is in the great majority of cases injurious.

In connection with the latter—opium—its exhibition in any form as routine treatment is very ill-advised. It is eliminated in all the secretions and excretions. It at the same time checks every secretion with the exception of that of the skin, and on account of this action on the secretions it is particularly contraindicated in tuberculosis. Its use in cough mixtures or diarrhœa mixtures is distinctly bad practice, unless it be to allay the suffering of a patient who is slowly dying. Even in these cases the patients are, as a rule, a thousand times more comfortable without it.

While thus briefly reviewing the modern and now generally accepted treatment of tuberculosis, one may be perhaps permitted in conclusion to say that, while in many cases where the disease has been detected in its incipency, or where it has not been of too acute a type, cures have been obtained, it is always to be remembered that one is in danger of exaggerating what

can be accomplished in a few months, because in the great majority of cases nothing is ever attained which is in reality more than a relative cure. Nor should it be forgotten that even this can only be maintained under favorable conditions of life. Nevertheless, even these results are worth the effort involved, inasmuch as they represent the best results possible from the knowledge which we possess to-day, and, at least, when compared with the apathy and hopelessness of a generation ago, they augur well for what we shall be able to accomplish to-morrow.

Toronto Free Hospital.

A CASE OF PITYRIASIS RUBRA PILARIS

BY GRAHAM CHAMBERS, B.A., M.B.,

Associate Professor of Clinical Medicine, University of Toronto, Physician, Toronto General Hospital.

J. M., aged seventeen, a student in drafting, consulted me, in August, 1910, on account of an eruption of his skin. As far as known no other member of the family has had a similar affection or, indeed, any skin disease. The family history is good, and free from tuberculosis, and the patient, himself, has always had good health.

The eruption began at the age of three years, appearing on the backs and palms of the hands, and since which date, although there have been periods of quiescence and improvement, the disease has from year to year extended until at present it covers the greater portion of the body.

Present Condition.—Patient is fairly well developed boy of average height, but somewhat deficient in weight.

The eruption involves the whole skin with the exception of parts of the scalp, face, neck, intra-clavicular regions and external genitals. The skin of the palms and soles is reddish, thickened and slightly scaly and presents lines, more marked than the normal. On the backs of the first digital phalanges are a number of horny black points occupying the hair follicles. With the exception of the face and scalp, the remaining parts of the affected skin present a diffuse thickening of the epidermis of a scaly or nutmeg grater appearance. The latter is produced by the aggregation of papules, and is well exhibited on the fronts of the legs in the photograph of the case. This condition is caused by small conical, hard papules situated at the sites of the hair-follicles. The inter-follicular epidermis is thickened to a less extent. The color of the papules is yellowish red or dull red. The papular condition gives one the impression that the eruption begins as discrete follicular papules, which by extending latterly may become confluent, forming areas in which the papular condition may be lost in the general thickening of the epidermis. The patient, however, states that this is not always the case as the thickenings in some parts, especially the folds made their appearance without any sign of papulation.

The condition of the scalp and face requires special mention. The hair is dry but fairly well developed. The skin of the scalp is dry and covered with dry yellowish white scales, furfuraceous

in character, but larger than those usually observed in dandruff. Thickening of the skin of the scalp cannot be made out by macroscopical examination. The skin of the face appears normal except in the regions of the naso-labial folds, where it appears somewhat dark, and is covered with dry, fine scales.

Other parts which should be specially referred to are the folds of the larger joints. The skin in these parts, especially the folds of the elbows and knees is hyperæmic, thickened, dry, scaly and exhibits accentuation of the normal lines, but shows no sign of papular formation.



The examination of the other organs of the body failed to elicit any sign of disease.

In the treatment of the case cod-liver oil, olive oil, and mineral foods were given internally and the patient was ordered to take a bath daily and apply an emollient preparation of lanolin and almond oil. Hygienic measures were also instituted. Under this treatment, there has been considerable improvement in the condition of skin.

In concluding the report of this case I may be permitted to make a few remarks on the disease in general and especially on its etiology, pathology and diagnosis.

The name pityriasis rubra pilaris was given to the disease by Devergie in 1857. Hebra described the eruption under the heading lichen ruber, and Kaposi, his son-in-law and successor enlarged the name to lichen ruber acuminatus in order that it might not be confused with the lichen planus of Erasmus Wilson. In England the first to describe the affection was Hutchinson, who designated it lichen psoriasis.

The disease is rare but possibly not so rare as is believed by some writers. In my practice there have been four cases. The cause is unknown. Heredity seems to have no etiological significance. It has been stated that the disease is frequently associated with tuberculosis. In the majority of cases the disease begins in childhood or early adolescence.

Microscopical examination of the skin reveals that the eruption is primarily a hyperkeratosis which results in inflammatory changes. The epidermis may become three or four times thicker than the normal. In a disease area the stratum corneum is everywhere thickened, but the hyperkeratosis is much greater at the openings of the follicles than in the intervening parts.

The diagnosis is usually easy. The character of the eruption which is most valuable in diagnosis is the presence on the backs of the fingers of hard conical papules or black points. In the photograph of the case of this report, these lesions can be seen by means of a magnifying glass. This feature is generally present and does not exist in any other eruption.

Pityriasis rubra pilaris might be confounded with ichthyosis, keratosis pilaris, psoriasis, and lichen planus. I may mention that the eruption of the patient under consideration in this paper was diagnosticated ichthyosis at a large clinic in England for two or three years after its appearance; and one can understand how this mistake might occur in the early stage of the disease during which the eruption may consist merely of scaliness of the scalp and possibly also of the palms and soles.

Selected Articles.

THE EARLY DIAGNOSIS OF CANCER OF THE UTERUS

BY FREDERICK McCANN, M.D., F.R.C.S.

The surgical treatment of cancer of the uterus has in recent years been considerably improved by more extensive operation. Thus, for cancer of the cervix, the operation should consist in the removal of the uterus, broad ligaments, appendages, upper portion of the vagina, and, if necessary, the pelvic lymphatic glands. For cancer of the corpus uteri the uterus, broad ligaments, and appendages should be excised. The abdominal route should be adopted in both cases, as it admits of thorough removal. The more extensive operation for cancer of the cervix had at first a mortality of 30—40 per cent., but this is gradually being reduced, and probably 10 per cent. represents the present mortality in expert hands. This will be further reduced when better means are obtained of combating the infection, often streptococcal, to which many patients succumb. The operation should be undertaken only by one who is an expert in pelvic surgery. Accurate hæmostasis is of paramount importance. All bleeding must be arrested at once. It is the continued small losses of blood during a long operation which prove too much for the patient. Moreover, many patients bear blood loss badly, especially if already weakened by previous hæmorrhage, and one cannot say how much more loss of blood they can stand. If this 10 per cent. mortality can be achieved, even in moderately advanced disease, how much better would the results be if the disease were detected early, before there is evidence of infection.

Will the disease recur? The answer depends on the type of the cancer, its situation and character, the rapidity of its growth, and the stage of the disease. The tendency to infiltration varies considerably in different types. At one extreme there is the cancer originating deeply in the substance of the cervical wall, which it rapidly infiltrates, spreading throughout the pelvic lymphatics; at the other there is the cancer originating from the surface of the vaginal portion of the cervix, which grows down into the vaginal canal and does not infiltrate its base of

origin until late in the disease. Between these two extremes there are intermediate grades in which the rate of inversion varies. About 20 per cent. of the patients are well five years after operation. With improved knowledge of the early signs of cancer, still better results are possible.

A thorough operation in the early stages is the great desideratum in the treatment of cancer. Cancer of the corpus, when treated by abdominal hysterectomy in its early stages, yields a good prognosis; when advanced, the results are bad. Unfortunately, in the earliest stages of cancer of the uterus there are no symptoms, and so the disease escapes notice unless discovered accidentally. The earliest symptom is a serous discharge, or if the patient has been subject to leucorrhœa there is an alteration in its character; it becomes more watery. If injured, the growth bleeds; or a tiny vessel may rupture as the result of a strain or in consequence of superficial ulceration, the discharge becoming streaked with blood. Bleeding is, however, *the sign* which attracts the patient's attention, and if it exists to any extent it means that the disease is well established. The bleeding may be irregular in onset or may occur after coitus, an injection, or vaginal examination, and in the early stages of cervix carcinoma it is inconsiderable. Cancer of the uterus is at first painless; pain, if severe and continued, indicates advanced disease. Slight bleeding is, as a rule, disregarded by the patient. If, however, the bleeding becomes increased or continuous, she becomes alarmed and seeks advice. Pain, if at all marked, prompts the sufferer to seek relief at once, but many women do not seek advice until the disease is advanced, because it is at first painless.

When a patient presents herself, careful inquiry should be made into the history, and special attention paid to the following:—

- (1) Discharge—quality, quantity, and duration.
- (2) Bleeding—duration and quantity.
- (3) Pain—situation, character and duration.
- (4) Wasting—duration and amount, exact weights if obtainable.

Discharge.—A foul discharge is a late symptom, and, when infection of the growth has not occurred, may be absent for a long time. It increases the risk of operation. Therefore, in the examination, the hands should be carefully cleansed, or, better, sterilized finger stalls or a rubber glove should be worn. The onset of a foul discharge often dates from an examination. In

multiparae with a gaping vulva the growth becomes readily infected; another source of infection is the injection syringe. When the vulva is not gaping, and the growth is protected from external contamination, it may occasionally assume large proportions without any foul discharge. In cancer of the body of the uterus a very foul discharge is exceptional, the characteristic being a watery discharge tinged with blood. When the cervix is affected some discharge usually occurs before the onset of bleeding, whilst in cancer of the body of the uterus not infrequently there may be no previous discharge. Sometimes discharge accumulates *in utero* (pyometra). This is not uncommon when a cervical cancer blocks the exit of the uterine secretion, but it also occurs in disease of the uterine body. The collection of pus becomes diminished or evacuated at intervals by gushes of discharge.

Bleeding.—When a cervical cancer is injured from any cause it bleeds, and the amount of bleeding is, as a rule, out of proportion to the injury. The bleeding *post coitum* may be slight or it may be excessive, depending chiefly on the stage of the disease. In cancer of the uterine body the bleeding may be profuse, but as a rule, it is slight, only coloring the discharge. As the majority of the cases occur between 40 and 50, the bleeding is regarded by the patient as due to the menopause. Excessive hæmorrhage at the menopause should be looked upon with suspicion, and an examination made without delay in order to determine if cancer exists. Bleeding, however slight, after the menopause should be regarded as due to cancer until the contrary has been proved. If these two simple rules were always followed many more cancers would be discovered early. Irregular bleeding of any description during menstrual life should receive immediate attention, and a thorough examination should be made.

Pain.—Cancer is at first painless; well-established pain indicates advanced disease. When the cervix is affected the pain may be of a dull, aching character and is referred to the sacral region. With the invasion of the connective tissue there appears a constant dull aching in the hypogastric region, in the sacral region, and extending down the front and back of the thighs. As the disease progresses still further, vesical pain is felt, accompanied by frequent micturition. Therefore, inquire into the character and frequency of micturition. Severe rectal pain also develops, and is aggravated by defæcation.

In the majority of cases cancer of the uterine body is for

long painless; pain indicates advanced disease except in the polypoid form. Probably the pain here is caused by uterine contractions attempting to expel the growth. When there is a diffuse growth in the uterine cavity, pain is not felt until the muscular wall is deeply invaded or the cavity distended by retained secretions.

Wasting.—Another fallacy concerning cancer is that wasting is always present. Both in cancer of the cervix and in cancer of the corpus increase in weight may occur during the early stages; so that increasing stoutness does not negative cancer. If there be no pain, no excessive bleeding and no foul discharge, the appetite remains good, and sleep is not disturbed, weight may be gained. The “cancerous cachexia” belongs to the late stages, and is due to septic absorption from the foul discharges, continued pain, loss of blood, and loss of sleep. The septic element is important; for, if disinfectants are used to control the fœtor, there is a marked improvement in the patient’s condition. It is curious how many women afflicted with uterine cancer are obese; especially when the corpus uteri is affected. Indeed it is the exception to find a spare woman suffering from the latter disease. This is difficult to explain.

When any of the above symptoms exists a careful examination should at once be made, even if bleeding is going on. Otherwise, valuable time may be lost. In the abdominal examination note the condition of the liver, for in advanced uterine cancer metastases are not uncommon. These at once indicate that the disease is inoperable. A vaginal examination is then made, aided by the speculum. The vaginal portion of the cervix is first examined. Is there any growth from its surface or in its substance? Is it irregular and nodulated, or is a definite ulcerated area to be seen or felt? If there is a growth, is it friable, *i.e.*, can portions of it be crushed between the fingers, and does this friability extend into the substance of the portio vaginalis? Is there hæmorrhage out of proportion to the amount of injury inflicted? Friability is a sign of great importance, and may be tested by the finger-nail, curette, sound, or ordinary long probe; but the degree of friability varies with the amount of interstitial tissue present in the growth. If one or both lips of the cervix are considerably enlarged, pressure upon them may cause a number of yellow points to appear on the surface, which are cancer masses squeezed out from the surrounding tissue. Friability will also be detectable in the enlarged cervical lips, and this manipulation will cause free bleeding.

When true ulceration is discovered—that is, a definite loss of substance—and traumatism can be excluded, the ulcer will be either tuberculous, syphilitic, or malignant, and in 90 per cent. it will be the last. True ulceration is a most important sign, as in some of the earliest cases a small ulcer has been the first local change discovered. Some confusion has arisen from confounding the so-called “ulcer of the cervix,” or erosion with true ulceration. The cervical erosion, which is a new growth composed of glands and interstitial tissue, is, pathologically, an adenoma, and is quite distinct from a true ulcer. It is true that certain pronounced types of erosion may cause difficulty in diagnosis, but a careful inspection will serve to distinguish these two conditions. An erosion is bright red, surrounds the os externum, fades away on the surrounding tissue, epithelial islets may be seen on its surface, and it is associated with a catarrhal condition of the cervical canal. A malignant ulcer in its early stages is situated to one side of the os externum; it is definitely circumscribed. Epithelial islets are never seen on its surface, *i.e.*, no attempt at healing, and it is friable, indicating infiltration of subjacent tissue. A hypertrophic or cockscomb-like erosion is also friable when tested with the fingers, but it does not infiltrate its base of origin and the subjacent tissue is not friable.

One or both lips of the cervix may be thickened and nodular from the presence of cystic dilatations, the so-called Nabothian ovules; but these are apparent through the speculum, and when punctured, the characteristic glairy fluid escapes. Considerable thickening of the cervix may occur in association with well-marked erosion and cervical catarrh. In such cases the erosion should be excised, or, if necessary, the cervix amputated. This treatment is much better than caustic applications, and may prevent the development of carcinoma.

If the portio vaginalis is healthy the hæmorrhage must be coming either from the cervical canal or the body of the uterus. The cervix proper should next be examined, beginning with the cervical canal. When the os uteri is open, admitting the finger-tip, the cervical canal may be explored. Soft friable growth may be discovered, which bleeds readily, and pieces may be brought away on the finger-tip. When this occurs there is little doubt that the disease is malignant. Should the os externum be not sufficiently patulous to admit the finger, it will be necessary to explore the canal with a sound or curette. If the sound penetrates even with gentle pressure into the cervical walls, it sug-

gests infiltration, and the curette will remove pieces of growth. Partial destruction of the rim of the os externum suggests a malignant process. The majority of cancer cases which are overlooked are examples of disease beginning in the cervical canal. The vaginal portion having been felt to be unaffected the hæmorrhage is treated medically without further investigation.

The disease may not be evident in the canal, but in the substance of the cervical walls. The cervical walls are enlarged, **hard, cartilaginous**, and the cervix is of an angry, livid color, which, in the absence of pregnancy, should suggest infiltration of the cervical walls. Rectal examination is then most useful in order to determine the relative size of the cervix to that of the uterine body, considerable enlargement of the cervix being found. This is a type of cancer frequently overlooked, and, as its tendency is towards rapid infiltration, early diagnosis is specially needful.

The cervical canal and cervical walls having been proved to be healthy, it is now necessary to examine the interior of the uterus, which may be done by the uterine sound, the curette, or, after dilatation of the cervix, with the finger. For this examination an anæsthetic may be required, especially in an elderly virgin; but it is best in such cases to obtain the patient's consent to do what is necessary should the disease prove to be malignant, and so avoid the necessity for a second anæsthesia. Moreover, it is not good practice to scrape or cut a malignant growth unnecessarily, and, what is so frequently advocated, viz., the digital exploration of the uterus, should not be lightly undertaken. It involves too much laceration of the uterine tissues, with the consequent dangers of septic and epithelial infection. All the information necessary may be obtained by gentle use of the curette, and a piece or pieces of growth obtained for inspection and microscopic investigation. The sound or curette will furnish information as to the character of the interior of the uterus, the presence or absence of elevations or polypoidal masses, and as to whether the wall is infiltrated with growth. In testing the latter, great gentleness must be used lest the uterine wall be perforated. If the whole mucosa is smooth this is against cancer, but a more extensive scraping may be done, in order to make sure that no area has been overlooked. Special attention should be paid to the region of the tubal orifices, for there cancer frequently commences. The amount of hæmorrhage following any manipulation is also important.

When the uterus is felt bi-manually there is frequently

nothing detected which would suggest the presence of disease. There may not be any enlargement; indeed, cancer may originate in the body of an undersized uterus. If there is enlargement, it is in the early stages uniform, regular, and painless, but the consistence is not infrequently softer and has been compared to the feel of a water cushion. Advanced cases may exhibit bosses on the peritoneal aspect, and there may be considerable uterine enlargement. The uterus may reach to the mid-point between the umbilicus and the xiphi-sternum.

An intra-uterine growth extending downwards may protrude through the external os and give rise to the impression that the disease is originating in the cervix. Such growth is friable and bleeds readily. It might also be confounded with a sloughing fibrous polypus, but although this is also friable, when the pieces are examined the individual fibres may be distinguished. Further, the ring of the external os is healthy and a stalk or pedicle can be palpated.

Cancer of the body of the uterus was formerly stated to be relatively rare, but whether owing to improved diagnostic methods or an increase in the disease it is now found much more frequently. It is, further, more common in nulliparae than cancer of the cervix, which is relatively rare. Multiparae suffer equally with nulliparae from carcinoma of the corpus, but the number of children borne by the multiparae is below the average. The duration of the disease appears in many cases to be longer than in cancer of the cervix, and the prognosis after operation is better.

The microscope plays an important rôle in the diagnosis of early cases of uterine cancer and in doubtful and suspicious cases. If there be a suspicious hard nodule or erosion or ulcer on the external os uteri, a piece the size of a pea or a bean with a boundary of healthy tissue should be excised. If the portio vaginalis be intact and there is uterine bleeding, sufficient material for examination may be obtained with a curette or a sharp spoon. The pieces should be sent to an expert for report. If the report is favorable the patient will be reassured; if unfavorable, immediate operation is imperative.

Early cancer can be cured by operation. Never treat cancerous ulcers with caustic; their appearance becomes masked and valuable time is lost. It is an error to wait and observe in order to arrive at a diagnosis. In doubtful cases a diagnosis must, and can be, made in a few days.—*The Practitioner*.

DIOXYDIAMIDOARSENOBENZOL

THE PRESENT POSITION OF "606."

The remedy for syphilis, which for the last six months has been so prominently before the medical, and even before the lay public, and which upon the Continent has become a popular subject of humorous cartoon, is now for the first time placed upon the market by Meister, Lucius, and Bruning, the firm to which Ehrlich has from the beginning entrusted its manufacture. The fact that the drug, which for commercial purposes will be known by the name "Salvarsan," is to be produced by the same firm which has up to the present supplied all the material used for the preliminary clinical work is important, for it is a guarantee that the substance to be supplied commercially will be properly prepared.

THE HISTORY OF "606."

It is now about nine months since the first communication was made by Professor Alt to the medical profession of the results obtained from the use of this remedy, but at the present moment many thousands of cases have already been treated. It may therefore be considered opportune to attempt to define in some measure the general attitude of the medical world towards it. The history of "606" resembles that of most new remedies, and may be divided into three periods: firstly one of enthusiasm, followed by a second of criticism and reaction, and finally by a stage in which the new drug finds its established place in therapeutics with its indications and limitations accurately defined. Many drugs, indeed, introduced amid great pomp and circumstance, never reach the final stage at all, but fade quickly into obscurity. Such a fate is not likely to overtake "606." No one who has had opportunities of using it denies that it speedily diminishes and usually removes active syphilitic lesions, and the real question at issue is whether it ought to supplant mercury as the routine treatment and whether we can expect it to stamp out the disease in the same way that by other methods we have been able to stamp out smallpox. The goal which Ehrlich has had in view during all his experiments on the organic compounds of arsenic has been to find a substance which will cure syphilis in one dose. Dioxydiamidoarsenobenzol, or to give it its commercial title "Salvarsan," apparently does so in many cases. Some cases, on the other hand, it fails to affect at all, some it affects only imperfectly, while others, again, relapse quickly after an apparent success, and it is as yet too soon to prophesy that there will be no late relapses. No doubt many of the

relapses which have occurred among the early cases treated were due to the administration of too small a dose; now that we know that even as much as 22 grains may be given with safety to an adult it is probable that relapses will become less frequent. One point on which almost all observers are agreed is the speed with which this drug acts: lesions which under mercury would take a month or more to disappear vanish in less than a week under the charm of "606." Even if a permanent cure is not attained in this time the acceleration in clinical recovery is of vast importance to the community at large, because it reduces so enormously the period during which the patient remains a source of infection to others, and it is perfectly reasonable to suggest that the permanency of the cure should be consolidated by the administration of mercury, a course which has already been adopted by certain German physicians, whose results will be awaited with great interest.

THE DANGERS OF THE NEW REMEDY.

What, then, are its special dangers, and are there any special difficulties in its administration? Up to the present twelve deaths have been recorded as following an injection. This is not a great number considering that many thousands of cases have now been treated, some already moribund, but in a few there is no doubt that the *exitus letalis* was accelerated by its use. Still, as our experience of the drug accumulates we shall be able to avoid the cases which are likely to be dangerous, and thus the peril of such accidents will be minimised. There seems no doubt that "Salvarsan" is far less toxic than any of the arsenic compounds which are its chemical parents—for example, atoxyl and arsacetin which have achieved a very bad reputation for causing optic atrophy. Kowalevski has, it is true, published a case of optic neuritis occurring, at an interval of some weeks, after an injection of Salvarsan, but this he regarded as a syphilitic relapse and succeeded in curing it by mercurial treatment, and several ophthalmologists record excellent results after the use of it in specific disease of the eye. We have heard of no case of nerve deafness due to it, as after the use of arsacetin.

HOW TO ADMINISTER "606."

Finally we turn to the difficulty of administration, and to the reaction and painful shock which may ensue. The substance is sent out in single doses in sealed and partially-exhausted glass capsules, and it has to be prepared carefully for injection. These preparations are rather awkward for those who are not accustomed to the manipulations of the chemical laboratory, and if

attempted for the first time are very like to lead to the waste of a dose or two, or even to the injection not of "Salvarsan," but of its decomposition products which may be extremely toxic. In the original method employed by Alt the injection was large in bulk, and was also strongly alkaline, so that it was extremely painful; in fact, in one case the shock was so severe that death ensued. The presence of severe nervous disease is one of the chief contra-indications to the use of "606." Respiratory failure occurs, if at all, within an hour or two of the injection. The extreme pain of the injection, which, curiously enough, men seem to feel much more than women, has been dealt with in several ways. Michaelis advocates the use of a neutral medium in which the drug is held finely suspended. Pasini advocates its administration suspended in *adeps lanae anhydricus* or *vaselinol*, but this is a cumbrous and inconvenient method. There seems to be no doubt that the bulk of the injection influences the pain to a great extent. The most satisfactory way, however, of minimising the pain is to give it intravenously, as is now advised by Professor Ehrlich himself, and this has the further advantage of accelerating the process of absorption, whereby the great desideratum of cure in one dose is made more likely. When given in this way the bulk of the injection must be largely increased in order to avoid the risk of intravascular thrombosis; 200 c.c. is the amount advised. Schreiber alone has practised this method ever since the introduction of the drug, but it does seem as if relapses are less frequent when it is employed than after intra-muscular injections.

Is it, then, possible to sum up in a few sentences the present position in regard to this new arrival in the world of therapeutics? We may assert without fear of contradiction that a very powerful anti-syphilitic agent has been found which is going to establish for itself an important place in our armamentarium. It is more doubtful whether it will ever usurp the position so long and honorably held by mercury; many syphilologists of distinction, among whom may be cited Professor Lesser, Professor Gaucher, and Mr. Ernest Lane are of opinion that it will not do so, although against them we can pit the long lists of successfully treated cases already published by equally distinguished physicians, chief among whom is Wechselmann. At any rate, it is not a remedy to be employed lightly or without strict examination of the case to be treated, and sure information of the rather complex technique, neglect of which might lead the practitioner into distinctly awkward predicaments.—*The Hospital*.

Progress of Medical Science.

MEDICINE.

IN CHARGE OF W. H. B. AIKINS, F. A. CLARKSON,
BREFNEY O'REILLY AND F. C. HARRISON.

Paroxysmal Tachycardia

In the *Livre Jubilaire du Professeur J. Tessier*, Dr. G. Baccelli makes an interesting contribution, in which he recommends the treatment of paroxysmal tachycardia by intravenous injection of strophanthine, and brings forward some important experimental and clinical evidence to support his views. He is of opinion that this morbid condition is not, as generally held, dependent upon any abnormal functioning of the vagi, but upon an irritative paralytic condition of the intracardiac ganglia. If the two vagi are exposed in a dog, and an intravenous injection of strophanthine be made previous to division of these nerves, the injection is followed by a considerable elevation of blood-pressure and a slowing of the heart-beat. If the vagi are then divided, the heart-beat is at once accelerated, but not to the same extent as is observed when the vagi are cut without any previous injection of strophanthine. Dr. Baccelli argues from this that the strophanthine acts upon the intracardiac ganglia, and through them upon the cardiac muscles. The author reports two cases of paroxysmal tachycardia with all the signs of failing heart, in which intravenous injections of strophanthine were most successful in their effects. The first patient was a man aged forty-eight, who had been for some time subject to attacks of paroxysmal tachycardia, followed by serious symptoms of heart failure. The usual treatment with bromide, morphia, and subcutaneous injections of strophanthine, was without effect, and the intravenous injections were then tried. Daily injections of strophanthine were administered, and each was followed by a sudden drop in the pulse-rate, an abundant diuresis, and a general improvement in the condition. At the end of a week the patient had returned to a normal condition, with a regular pulse of seventy to eighty beats a minute. The second patient had suffered from a similar attack of paroxysmal tachycardia for over a month, with the same severe symptoms of failing heart. The injections were followed by the same marked success, and a rapid disappearance of all the symptoms.—*The Hospital*.

The Influence of Diet Upon the Formation and Healing of Acute Ulcer of the Stomach

Animal experimentation, conducted by Dr. Bolton, of University-College Hospital, has been used with apparently much success to clear up this mooted question. He reports his findings in a recent number of *The British Medical Journal*. Cats were used, and gastric ulcers produced by injection of the author's gastro-toxic serum. Half the animals were placed on a milk diet, while the others were on meat.

The conclusions he draws from these experiments are as follows:

1. The theory with regard to the part played by the gastric juice in the production of gastric ulcer receives further confirmation, because ulceration is the more rapidly produced in proportion as the gastric juice is allowed a longer period of contact with the wall of the stomach.

2. The epithelium grows over the base of an ulcer more rapidly when the animal is given a milk diet than when it is given a meat diet. In the case of a milk diet the base of a moderately sized ulcer is usually completely covered by the twentieth day, whilst in the case of a meat diet the same sized ulcer would, in most cases, be uncovered in the centre at that time.

3. Frequently, in the case of meat-fed animals, the ulcer is completely uncovered on the twentieth day, the granulation tissue of the base of the ulcer having become necrotic. Such an ulcer may be only one-fifth of the size of the original ulcer, owing to the contraction of the fibrous tissue in the base, although healing has only commenced at the edge.

4. In the treatment of a case of ulcer of the stomach the following principles should be observed:

- (a) During the early stages of the healing of acute ulcer the patient should be given a food which does not stay long in the stomach, and which does not excite a copious flow of gastric juice.

- (b) The period of treatment in bed should be at least three weeks.

- (c) The starvation diet of the older physicians is not necessary, because the general nutrition suffers too much, and because ulcers heal well on some diet such as the above.

- (d) In the case of acute ulcers which are extending, or chronic ulcers, healing cannot be expected to occur in three weeks, because the ulcer must first be got into a suitable condition for healing, and then, owing to its size and thickness, the healing

must take some weeks longer to be completed, so that the treatment in bed is to be conducted like that of simple acute ulcer, but extended over a period at least twice as long.

(e) Since in many cases of gastric ulcer there is hyperacidity of the gastric juice, and when the gastric juice is acting destructively hyperacidity increases this destructive tendency, this high degree of acidity should be controlled by the administration of alkali. This is not so necessary in acute ulcer as in the more chronic forms, because the few estimations that have been made of the gastric secretion in acute ulcer show that it is not hyperacid, and I have found experimentally that the effect of acute ulcer is to diminish the secretion in the early stages, and that the latter becomes normal as the ulcer heals.

Hyperchlorhydria

Rummo (*Rif. Med.*,) continues his lectures on various gastro-pathies, and in this paper deals with hyperchlorhydria. The aim of treatment in these cases is to regulate the diet, neutralize the excess of acid, and diminish the over-secretion. Incidentally, he mentions Fletcherism, and points out that something like this was taught by Epimenides, the Cretan, in antiquity. Authorities have differed widely as to the relative value of a mainly albuminoid diet and of one mainly consisting of hydrocarbons; much can be said on theoretical grounds for each system. In the practical treatment one ought to differentiate between temporary and more or less acute cases and chronic conditions where there is more or less permanent gastrorrhœa and impaired motility. Food should be given at short intervals, and should be well masticated, and of a non-irritating character, and at least an hour's rest should be taken after a meal. Spices, aromatics, and excess of salt are to be excluded. Drinks should be insipid, and not changed frequently, so as to avoid psychic stimulation of the stomach. As regards an albuminoid *versus* a hydro-carbon diet, no general law can be laid down, each patient must be taken as an individual, and the particular article of diet, whether albuminoid or vegetable, estimated with reference to the particular case. Meat extracts, soups, raw meat, alcohol, coffee, and tea, are all powerful stimulants of HCl. On the other hand, milk, white flesh, eggs, bread, and rice have much less stimulating effect on the production of HCl. On the other hand, in acute and painful hyperchloridria a diet mainly albuminoid is usually well tolerated; at the same time, such a diet ought to be considered as one of urgency only, and not to be

continued. Fatty substances are to be avoided during acute attacks, and their use deferred to periods of quiescence.—*British Medical Journal*.

Drug Hyperkeratosis

In the first of Ruete's two cases (*Münch. Med. Woch.*) a man had taken 18 drops of Fowler's solution every day for two years; it had been prescribed originally for herpes, and he had not seen a physician since. During the last year keratosis in both hands and feet had developed to a pronounced degree, the palms being covered with wart-like excrescences. The patient was otherwise in good health and free from nervous disturbances. On suspension of the arsenic the skin affection subsided, but it showed a tendency to recur if he took arsenic in any form. There was no melanosis. In the second case, the hyperkeratosis was evidently of syphilitic origin, and was accompanied by ichthyosis of the back, all subsiding under mercurial treatment.—*J. A. M. A.*

Tuberculosis of the Kidney

Johannessen accepts the possibility of spontaneous recovery from tuberculosis of the kidney—several such cases are on record, but the rarity of this occurrence does not permit reliance on it. He gives details of a number of instructive cases. The subjective and objective symptoms may vary within a wide range, and the tuberculous process in the kidney may run an entirely latent course for a long period, without any subjective or objective symptoms. This explains why tuberculous nephritis often is not diagnosed until it has reached a comparatively advanced stage. In other cases pains and hæmaturia bring the patient to the physician in an early stage. In some cases the first symptoms are pollakiuria, with frequent micturition or even incontinence. Guisys noted pollakiuria as the only symptom of incipient kidney tuberculosis in six out of thirty-one cases; in three cases nocturnal incontinence of urine was the first sign of trouble. This may be the result of what Guyon calls reno-cystic reflex action. The kidney is generally enlarged, but may sometimes be abnormally small; in the beginning the kidney is not palpable as a rule. In the incipient stage there may be a dull or vague pain of varying intensity and apparently spontaneous, localized in one of the lumbar regions, sometimes the sound side, or paroxysmal severe pain, radiating down to the bladder or to the other kidney or up into the shoulder. The urine may be limpid and acid, without albumin. In one of the cases reported

the urine was pathologic, but the bladder seemed entirely normal. In another the severe pains were localized in the left side, while the right was the diseased kidney. In another case the pains developed suddenly in the night, radiating to the bladder and urethra, and accompanied with vomiting and chills. This pseudocolic recurred three or four times in two or three months, the patient having no pain in the intervals. One patient was a young man, apparently healthy until he noticed pollakiuria for two months, and then the pseudocolic above mentioned. Now, five months after nephrectomy, he seems in the best of health. In the case of a woman of 28, a similar sudden nocturnal pseudocolic was the very first sign of trouble.—*J. A. M. A.*

Schott-Nauheim Treatment

Much has been written about the use of carbonic acid baths as strengtheners of the heart, and there has of late been much criticism also of these baths. In my mind there is no doubt that the carbonic acid bath is really a very efficient agent in cardiac therapy, provided the baths are used only when indicated, and then only by those thoroughly trained in their application and conversant with their effects, for they can be a grave menace to the welfare of the patient rather than a benefit, when employed by the tyro. While there can be but little doubt, as James McKenzie points out, that a large part of the benefit derived from Nauheim and other bath resort treatment is due to the rest, change, diet, etc., of those places, nevertheless the carbonic acid baths in themselves are exceedingly useful therapeutic measures in selected cases, and especially because the stimulus applied can be very exactly graded and thus suited to the individuality of the case in hand. The blood pressure rises in the bath and continues higher for from fifteen minutes to half an hour, and the pulse is slowed. One can vary the strength of the stimulus by varying the amount of gas and the temperature of the water. The cooler the bath and the richer in carbon-dioxide the stronger the stimulus. At Nauheim the patient is always given an indifferent bath first, and then experiments are most cautiously made to see how the patient responds. The excellent results obtained there in many cases are doubtless due to the large experience of the men who have devoted years to the work. Of course these baths are applicable only in very moderate grades of cardiac insufficiency. They are wholly contra-indicated in the severer grades.—*Dr. L. F. Barker, in Virginia Medical.*

SURGERY

IN CHARGE OF E. E. KING, G. A. BINGHAM AND
C. B. SHUTTLEWORTH.

Ingrowing Toe-nail

In the *International Journal of Surgery* for December Fuller of Chicago has an interesting article on this simple yet much neglected lesion. The condition should really be called "overgrowing toe," as it is the soft tissues which hypertrophy and grow over the nail, most usually brought about, as is well known, by the wearing of ill-fitting boots. In treating the condition he does not evulse the nail, but removes a definite wedge-shaped piece of tissue, including all the soft parts, from the side of the toe. When sutured the projecting abnormal mass is lowered in position and the embedded nail is allowed to rise above it, where it is maintained for about ten days, when treating is usually complete. Three points are to be emphasized: First, operate on the toe, and not on the nail; secondly, the wedge-shaped piece of tissue to be removed from the side of the toe should be long enough and wide enough so that the wound margin next to the nail will, when the stitches are tied, pull the mass of tissue covering the nail border as far from the latter as possible; thirdly, a short convalescence should always be aimed at, which is guaranteed by observing the other two steps.

Extensive Saline Infusion in Treatment of Peritonitis

Bertelsmann (*Deut. Zeit. für Chirurgie*) strives to restore approximately normal conditions in the circulation in peritonitis by saline infusion before he attempts any operation. In fourteen cases of peritonitis last year, treatment was by intravenous saline infusion of nearly 4 litres of salt solution before and during the operation. Large compresses were laid over the intestines when the abdomen was opened, and the abdominal walls were fastened over them with silk sutures in such a way that no intestines could protrude, while a broad slit was left open between the lips of the wound. After the operation, subcutaneous or saline infusion is continued at need up to 20 litres in the first two days. By this copious flushing of the vascular system the stagnation in the peripheral vessels is combated and the heart given something to pump on; small amounts of

salt solution do not accomplish this. He operates in every case of peritonitis, no matter how desperate it may appear. Of the six fatalities in his series, five were in patients practically moribund when first seen. The only death that had not been expected was in a woman who died of embolism twelve days after the operation. He suggests several queries for further research: 1. The share in peritonitic collapse of the inflammatory congestion, and whether this is to be combated or regarded as a favorable element. 2. Is the collapse during operations for peritonitis due to the fact that the blood rushes into the vessels in the abdomen when all pressure is removed from these vessels, and can this assumption be sustained by experimental research? 3. Does bacteriemia frequently accompany peritonitis? 4. Is existing bacteriemia influenced favorably or unfavorably by saline infusion?—*J. A. M. A.*

Improved Technic for Extension with Fracture

Wildt calls attention to the importance of counteracting contraction more than is possible with the ordinary Bardenheuer technic, especially after the adhesive plaster has loosened up a little. He describes the technic with which he accomplishes this by interposing a rubber strip in the plaster where it passes over the fracture. The elastic strip is sewed to the strip of plaster, leaving fulness enough so the rubber can stretch by 1 cm. The adhesive plaster is then applied as usual, but where it crosses the fracture it is cut across, leaving the elastic rubber to stand the strain alone at this point.—*J. A. M. A.*

Radium Treatment of Cancer

In view of the fact that little has been reported on the end-results of this method of treatment, Dr. A. Exner (*Münch. med. Wochensch.*) contributes his own experience on this subject. In his opinion, even deep-lying tumors can sometimes be permanently removed by adequate use of radium. The difficulty encountered is that the patients too often withdraw from observation before the completion of treatment because of the discomfort experienced and the long time required for a cure, since, in the case of large tumors, as many as 70 to 100 sittings are necessary. In the four cases recorded, comprising malignant ulcerations of the cheek, cancer of the jaw and of the upper lip, a permanent cure was obtained, although the prognosis had been unfavorable.—*International. Jour. of Surg.*

Editorials

ONTARIO MEDICAL ASSOCIATION, TORONTO, 1911

The 30th Annual Meeting of the Ontario Medical Association will be held in Niagara Falls, Ont., on May 30th, 31st, and June 1st. The spacious rooms of the Clifton House have been secured for the meetings, and from the appearance of the provisional programme which has just come to hand, the attendance this year should surpass all previous records.

The session will open on Tuesday morning, May 30th, with registration of members at the Secretary's desk. At 2 p.m. the President delivers his address, which is followed by a symposium on appendicitis. The pathological aspect is discussed by N. T. McLaurin, Toronto, the medical treatment by R. D. Rudolf and the surgical by H. A. Bruce, Toronto. Following this is the address in medicine delivered by a Canadian, T. B. Fletcher, now associate Professor of Medicine in Johns Hopkins, Baltimore.

8 p.m.—Evening Session:

1. The Relation of Laboratory Work to Medicine—Norman M. Harris, Prof. of Bacteriology, University of Chicago.

2. Public and Professional Aspects of the Pneumonia Question—William Charles White, Medical Director, Tuberculosis League, Pittsburg, Penn.

9 p.m.:

Reception in Clifton Hotel Ball Room tendered to the members of the Association by the President, H. R. Casgrain.

Wednesday, May 31st—Morning Session:

Surgical Section—9 a.m.

1. A paper—Robert Lucy, Guelph.
2. Surgical Diagnosis of Lesions of Kidney and Bladder—J. K. McGregor, Hamilton.
3. Open Method of Treating Fractures—F. N. G. Starr, Toronto.
4. A paper—A. Primrose, Toronto.
5. A paper—E. Archibald, Montreal.
6. Thoracic Surgery—E. Von Eberts, Montreal.
7. Some Interesting Cases—H. S. MacKendrick, Galt.

Medical Section—9 A.M.:

1. Bacteriology of Tuberculosis—A. H. Caulfield, Gravenhurst.
2. A paper—John McCrae, Montreal.
3. The Present Status of Radium Therapy—W. H. B. Aikins, Toronto.
4. A paper—L. E. Roundtree, Baltimore.

Gynæcology, Obstetrics and Pædiatrics Section—9 a.m.

1. Post Partum Hæmorrhage—Robert Ferguson, London.
2. Non-surgical Treatment of Tuberculous Adenitis—Campbell Laidlaw, Ottawa.
3. Use of Cold Baths in Treatment of Diseases of Children—James Newell, Watford, Ont.

Discussion led by S. McCoy, St. Catharines.

4. Differential Diagnosis of Right sided Salpingitis and Appendicitis. When to Operate in Salpingitis? When to Operate in Appendicitis?—S. M. Hay, Toronto.

5. Diagnosis of Extra-Uterine Pregnancy—James McLeod, Buffalo.

Discussion led by Dr. Goldsborough, Buffalo, N.Y.

Section of Hygiene and Military Sanitation—9 a.m.

1. Municipal Control of Milk Supply—Charles J. Hastings, M.H.O., Toronto.

2. A paper—John Philipps, Associate Professor of Medicine, Western Reserve University, Cleveland.

3. A paper—J. Heurner Mullin, Hamilton.

4. A paper—Major Lorne Drum, P.A.M.C., General Secretary Canadian Public Health Association.

Wednesday Afternoon. General Session—2 p.m.

1. Address—George W. Crile, Cleveland.

2. Surgical Diseases of the Umbilicus—Thomas Cullen, Assistant Prof. Johns Hopkins, Baltimore.

4 p.m.—Business Session.

Wednesday Evening, Annual Dinner, Clifton Hotel Banquet Hall.

Thursday Morning, June 1st, Surgical Section, 9 a.m.

1. A paper—H. R. Elliot, Niagara Falls.

2. Two Cases of Phlegmonous Enteritis—L. W. Cockburn, Hamilton.

3. A paper—C. T. McKeough, Chatham.

4. Fractures—Walter McKeown, Toronto.

5. A paper—Hadley Williams, London.

6. A paper—Ingersoll Olmstead, Hamilton.

7. A paper—James H. McGarry, Niagara Falls.

Medical Section, 9 a.m.

1. A paper—F. C. Neal, Peterborough.

2. Aortitis—F. Arnold Clarkson, Toronto.

3. Serum Treatment of Pneumonia—James H. Duncan, Chatham.

4. Our results with "606"—R. P. Campbell, Montreal.

Gynæcological Section, 9 a.m.

1. A paper—A. B. Welford, Woodstock.

2. Infantile Eczema—W. H. Moorehouse, London.

3. A paper—A. T. Shillington, Ottawa.
4. Typhoid in Child, Complicated by Thrombosis of Femoral Artery—Henry T. Machell, Toronto.
5. Twisted Pedicle of Ovarian Cyst—E. R. Secord, Brantford.
6. A paper—Charles Carter, Hamilton.
7. Cæsarean Section, When to Operate—Frederick Fenton, Toronto.
8. Phlebitis following Pregnancy—J. F. Hanley, Almonte.

Discussion opened by Adam Wright and A. T. Shillington.

Section Eye, Ear, Nose and Throat, 9 a.m.

1. A paper—T. Woodruff, Chicago.
2. A paper—Dr. MacPherson, New York.
3. A paper—D. G. Wishart, Toronto.

Thursday Afternoon, General Session, 2 p.m.

1. Address in Surgery—A. E. Garrow, Assistant Prof. of Surgery, McGill University, Montreal.
 2. Symposium of Anterior Poliomyelitis.
 - (a) Epidemiology—Robert Parry, Hamilton.
 - (b) Surgical Treatment—John Parry, Hamilton.
- Discussion led by A. Moir, Dunnville.

F. ARNOLD CLARKSON,

Secretary.

The Saskatchewan Medical Journal has with its January issue changed its name to The Western Medical News. Under its former name this journal was the official organ of both the Saskatchewan and Alberta Medical Associations, and as such has been a great source of strength to the profession in the West. Under its new title and with the collaboration of many prominent medical men its sphere of influence should be greatly extended.

THE RESIGNATION OF DR. BROWN

The local profession of Toronto, and also the general profession of Ontario, were much surprised to learn February 1st that Dr. J. N. E. Brown, Superintendent of the Toronto General Hospital, had resigned from his position, and requested to be relieved of his duties by April 1st.

We do not happen to know anything about Dr. Brown's reasons, except what we have learned from vague rumors reported in the newspapers.

Dr. Brown received his appointment in the latter half of 1905, and was on duty practically 24 hours a day during seven days of the week with the exception of one short holiday of seven or eight weeks, and a few other odd days which were mostly spent in attending meetings of medical societies, and especially those of Hospital Superintendents. His wonderful devotion to duty and his kindly courtesy have ever been highly appreciated by those of the profession and public who have come in contact with him. There may perhaps be one exception and that is the Board of Trustees. If its members thought that Dr. Brown's services were not worth more than \$3,000 together with a little scrub cottage rent free, we think that they did not properly appreciate the services rendered. Previous to Dr. Brown's appointment to the General Hospital, he spent over six years in the Yukon as Territorial Secretary and Medical Health Officer.

Dr. and Mrs. Brown expect to sail April 19th, from Montreal to Bristol. After a short stay in England they will go to the Continent and remain some time in Germany, where they will study the construction,

organization and equipment of Hospitals. They hope to return in time to attend the Meeting of the American Hospital Association in New York in September, 1911, Dr. Brown being Secretary of that organization.

BEQUEST OF \$5,000 TO UNIVERSITY OF TORONTO

A bequest of \$5,000 has been received by the University for the establishment of a new lectureship in connection with the university, from Mrs. Lydia Marfleet. It will be called the Marfleet Lectureship, in memory of the late Pearson Kirkman Marfleet, who was formerly a lawyer in Trophettown, Illinois. Mr. Marfleet spent some time in Toronto a number of years ago.

A lecturer will be appointed by the Board of Governors about once in four years, the first to be made next winter. The choice will probably be some prominent man, who will be able to discuss phases of the national movement in Canada and the United States.

NEW BOARD OF HEALTH FOR ONTARIO

A new Board of Health has been appointed for the province. By an order-in-council passed Jan. 23 the Provincial Government appointed Dr. Adam Wright, of Toronto, as chairman of the board. His associates are Dr. David B. Bentley, of Sarnia; Dr. Geo. Clinton, of Belleville; Dr. W. H. Howey, of Sudbury; Dr. Paul J. Maloney, of Cornwall; Dr. James Roberts,

of Hamilton, and Dr. J. W. S. McCullough, who was re-appointed secretary and chief health officer of the province.

This board succeeds the one appointed by the Whitney Government in 1906. Dr. Charles Sheard, of Toronto, was made chairman, and his associates were:— Dr. M. I. Beeman, of Newburgh; Dr. W. R. Hall, of Chatham; Dr. Coughlin, of Peterboro; Dr. Robinson, of Guelph; Dr. J. W. S. McCullough, and Dr. C. A. Hodgetts, secretary. Since that time Dr. Coughlin has been appointed head of the Institute for the Deaf and Dumb at Belleville; Dr. Robinson has been appointed to the Hospital for the Insane at London; and Dr. Hodgetts was appointed head of the Department of Public Health on the Conservation Commission.

LOCAL OPTION LAWS

We notice in a flourishing town in Western Ontario several parties were tried on charges of breaking the laws in connection with the Local Option Laws early in February. The proprietor of one of the leading hotels and his bartender were fined \$200 and \$100 respectively. Three local druggists, one of them a woman, were fined \$100 and costs, each, for selling on improper requisitions, and two practicing physicians were fined \$10 and costs each for issuing improper prescriptions, for alcoholic liquor. It is hoped that the great majority of our physicians realize that issuing improper prescriptions under such circumstances is a very serious offence. It is not

simply a violation of the law of the Province, but it is also a very dishonorable thing from a professional standpoint.

BRITISH MEDICAL ASSOCIATION

As we have already announced the 79th Annual Meeting of the British Medical Association will take place at Birmingham, July 25, 26, 27, 28, 1911, under the Presidency of Dr. Robert Saunby. The Annual Representative Meeting of the Association will begin on Friday, July 21st.

At the regular meeting the address in Medicine will be delivered by Dr. Byron Bramwell, of Edinburgh, and the address in Surgery will be delivered by Mr. Jordon Lloyd of Birmingham.

POLIOMYELITIS

During the last two or three years we have heard much respecting the epidemics of infantile paralysis in many parts of the world. We have heard more about New York perhaps than any other single city. In a recent article published in the *New York Medical Journal* much interesting information is given respecting the prevalence of the disease. It is supposed that at least 20,000 cases occurred in the United States last summer. The journal remarks that aggregate statistics are always impressive, but considers it well to reduce them to ratios. The 20,000 represented a gross incidence of about 1 to 5,000 of the entire population.

the frequency of attacks of acute anterior poliomyelitis in adults.

We are not at present in a position to speak definitely as to the cases that have occurred in Toronto and other parts of Ontario. There seems to be no doubt that a fair number of adults had attacks of a very malignant form of the disease, which caused death in a very short time. We hope in the near future to get further particulars from physicians in Toronto, who have studied the subject carefully, and have followed closely the great work which has been done by Flexner and others.

Notes

MEDICAL INSPECTION OF TORONTO SCHOOLS

The Toronto Board of Education have appropriated \$24,000 to initiate a system of medical inspection of school children. Dr. E. W. Struthers has been appointed Chief Medical Inspector, with eight assistants, viz.: Drs. Helen MacMurchy, Wilmott Graham, F. S. Minns, E. C. Hill, Estella Smith, G. A. Winters, F. G. Munn, and R. R. Hopkins. A supervising nurse and seventeen assistant nurses have also been appointed.

Personals

Dr. Newbold Jones is removing his office to 64 Bloor Street West, Toronto.

Dr. Wm. Mabee has commenced practice at 236 Sherbourne Street, Toronto.

Dr. R. T. Noble has removed from Gerrard St. to 410 Bloor St. West, Toronto.

Dr. C. E. Hill, formerly of New York City Hospital, has taken up practice in Toronto.

Dr. John Caven, of Toronto, left for Florida, Dec. 22nd, and remained there about two months.

Dr. Geo. McDonagh left Toronto for the Barbadoes, January 27th. He will probably return early in April.

Dr. A. M. Clark, formerly of Dunnville, has removed to Toronto and taken up practice at 260 Avenue Road.

Dr. Kennedy McIlwraith, of Toronto, spent a portion of the month of February in Virginia, recuperating from la grippe.

Dr. Frederick J. Hazelwood has been appointed Superintendent of the Toronto Isolation Hospital at a salary of \$1,800 per year.

Mr. C. A. Smith succeeds the late Mr. Irving Henry Taylor as manager of the Canadian branch of the Frederick Stearns Company.

Dr. W. H. Pepler, Toronto, has been appointed the representative of Trinity University in the Medical Council in the place of Dr. J. Algernon Temple, resigned.

Dr. Fred J. Tees, formerly Superintendent of the Montreal General Hospital, has resigned to engage in private practice in that city. Dr. George Shanks has been appointed in his stead.

Dr. G. E. Kidd has been appointed Chief of the Department of Practical Anatomy of the Medical Faculty of Queen's University, in the place of Dr. Etherington, resigned. Dr. Kidd is at present Senior House Surgeon in the Kingston General Hospital.

Dr. Bruce Riordan, of Toronto, made a somewhat slow recovery from his recent attack of typhoid fever. On the advice of his physician he started for Bermuda, Feb. 17th, where he expected to remain two or three weeks, after which he will return to Toronto and enter into active practice.

Dr. C. J. O. Hastings, the Medical Health Officer of Toronto, having resigned from his position on the active staff of Grace Hospital, has been transferred to the Consulting Staff.

The following appointments have also been made in Grace Hospital: Dr. Gilbert Royce, Senior Surgeon of the Ear, Nose and Throat Department. Drs. R. L. Griffiths and F. A. Clarkson have been transferred from the Outdoor to the Indoor Staff in Medicine.

Book Reviews.

A Manual of Physical Diagnosis. By BREFNEY ROLPH O'REILLY, M.D., C.M. (F.T.M.C. Toronto, M.R.C.S., Eng., L.R.C.P. London). Demonstrator in Clinical Medicine and in Pathology, University of Toronto; Assistant Physician to St. Michael's Hospital, Toronto; Physician to Toronto Hospital for Incurables. With 6 Plates and 49 other Illustrations. Philadelphia: P. Blakiston's Son & Co., 1012 Walnut St., 1911.

We are glad to have the privilege of reviewing this book for like many others, both teachers and students, we have keenly anticipated its appearance, and have not been disappointed.

If the laws of heredity hold good, the production of one who counts descent on one side from John O'Reilly, a distinguished court surgeon of the time of George IV. and William IV., and on the other side from the Honorable John Rolph, the father of medical education in Upper Canada, may well be expected to be a production of more than ordinary merit and deserving more than passing attention.

When it is further considered that the material gathered here has been revised and approved by Dr. William Osler of Oxford, and Dr. Lewellys F. Barker of Johns Hopkins, one might consider that the last word had been said and that it were futile for us to add our own small portion of criticism.

The subject of Clinical Diagnosis is a large one, and up to the present we have failed to see any book which could sufficiently discriminate between essentials and non-essentials, to render it perfectly suitable for the beginner. Dr. O'Reilly has overcome this difficulty, and from his own experience as a clinician has constructed this manual which we predict will be heartily welcomed by all engaged in the study of the subject.

Special importance has been laid on inspection and rightly so. One who has trained himself to observe with the eye can accomplish far more than one who has been taught to rely too much on instruments of precision for every point in diagnosis. One other feature we would like to commend and that is the author's insistence on regarding the patient as a personality and not as a mere physiological or pathological problem in the abstract. This is a matter too often lost sight of by many teachers, and is a serious handicap to the student when he comes to practise.

The matter is excellently arranged and the type clear and distinct. Splendid illustrations and plates, many of which are original have been used to good effect. Headings in large type indicate the particular sign or symptom discussed, so that any required point is easily found.

While essentially a student's book for work in the hospital ward we venture to say that many practitioners will find it of interest and value.

Dr. O'Reilly is to be congratulated for the patience and diligence he has shown in producing, in the face of many difficulties such an excellent treatise as the one before us.

On Acute Intestinal Toxæmia in Infants. An experimental investigation of the etiology and pathology of epidemic or summer diarrhœa. By RALPH VINCENT, M.D., M.R.C.P., Senior Physician and Director of the Research Laboratory, the Infants' Hospital, London. An address delivered before the Glasgow Obstetrical and Gynæcological Society on Nov. 23, 1910. London: Bailliere, Tindall & Cox, 8 Henrietta St., Covent Gardens, 1911.

This small book of eighty-three pages gives the results of the author's investigation into the etiology and pathology of epidemic or summer diarrhœa, and was first given as an address before the Glasgow Obstetrical and Gynæcological Society in November last.

The animals selected for experimentation were kittens about two months old and weighing about one pound. They were fed with milk so modified to suit the observer. One series of kittens were given milk raised to 200 degrees Fahrenheit and then incubated for twenty-four hours at 85 degrees Fahrenheit; another were given sterilized milk to which a culture of bacillus subtilis had been added, while in other series the bacillus mesentericus vulgatus or the bacillus proteus vulgaris was used. Without exception the kittens died, some as early as the fourth day, while others lived as long as a month, the average being about twelve days.

The cause of death the author believes is the toxæmia arising from the putrefactive organism normally present in the bowel. But they are allowed to produce their ill effect as the result of the boiling, which destroys the lactic acid organisms which are non-spore forming, while the spore producing putrefactive bacteria may reproduce themselves, and in the absence of the acid medium grow most luxuriantly. In other words then, the kit-

tens die because they are unable to maintain the normal acidity of the intestinal contents, thus allowing the putrefactive bacteria full sway.

The conclusion naturally arrived at is that infants should be fed fresh raw milk, and this is done at the Infants' Hospital, the milk being cooled immediately and transferred in insulated churns. Boiling, sterilizing or pasteurizing of milk are therefore most strongly condemned by the writer.

Clinical Diagnosis and Treatment of Disorders of the Bladder with Technique of Cystoscopy. By FOLLEN CABOT, M.D., Professor of Genito-urinary Diseases, Post Graduate Medical School, Attending Genito-urinary Surgeon, Post-Graduate and City Hospitals, New York City.

Dr. Cabot has got together a small volume which is of the utmost importance to the general practitioner. It is written by a specialist to aid the general practitioner in arriving at a proper diagnosis in many obscure cases. Disorders of the bladder are, in a very large number of instances, very unsatisfactory in responding to treatment. The author has gone very minutely into the diagnosis, has graphically described the uses of the Cystoscope, and shown how it is quite possible that the general practitioner may become quite efficient with its use. We disagree with one point, however, and that is, his use of cocaine as an anæsthetic. Novocaine is much safer and equally effective. We can recommend this volume without hesitation for its thoroughly practical handling of a subject that has been very much neglected.

E. B. Treat & Co., Medical Publishers, 241-243 West 23rd Street, New York, N.Y.

A Text-Book of Medicine. By G. DIEULAFOY, Professor of Clinical Medicine at the Faculté de Médecine de Paris; Physician to the Hotel Dieu; Membre de L'Académie de Médecine. Authorized English translation from the fifteenth edition of "Manuel de Pathologie Interne" by V. E. COLLINS, M.D. Lond., M.R.C.S., L.R.C.P., and J. A. LIEBMANN, Ph. D., M.A., LL.D. In two volumes. New York: D. Appleton and Company. 1910.

The practice of medicine on this continent is so dominated by English and German ideals that it is most refreshing to get a view of the French outlook. Prof. Dieulafoy's work has been a standard in his native land for many years, and the trans-

lators have successfully rendered his thoughts into bright, crisp English that reads like a novel. In fact, the book is so fascinating that one hates to lay it down.

The whole subject of internal medicine is dealt with thoroughly. Certain portions, such as the nose and throat and oedema of the larynx, receive much more attention than in any English text-book. Everywhere syphilis is thoughtfully considered, and, as in all continental works, is always in the foreground.

But the chief charm of this excellent work is the French viewpoint. For instance, in one chapter, the author describes pneumococic gastritis, appendicular vomito negro, and exulceratio simplex, all of which he considers common enough to warrant several pages. Of the latter condition especially, he cites many interesting examples.

Much of what he says on treatment must perforce be old, but he has enough that is new to repay one for reading the book. Some of his methods however are rather startling. For example, in dealing with the treatment of endocarditis, he says (p. 423): "Local treatment should not be neglected. It consists in application of Vienna paste to the cardiac region and the issue is allowed to suppurate freely."

Little mistakes in proof-reading will creep in of course, in a first edition. We find on (p. 1924) "Draconian regime," when the translator meant "regimen." The index, too, has the fault of most European works, and suffers badly when compared with Osler's text-book. But this is only a very minor point.

Taken as a whole, these two volumes are filled with new and practical thoughts, in most readable English, and fully equal to anything that has appeared in Canada during this century.

The Denver Chemical Company is exceedingly thoughtful of the medical press. This year the Christmas remembrance is in the shape of a desk set of coupon shears and letter opener. Their good wishes that accompany the present are as much appreciated as the present itself. This desk set is exceedingly neat, of beautiful antique design sheathed in a scabbard, which renders the instrument absolutely harmless. The one thing that is peculiar to us, however, is why they should anticipate that medical editors should ever require coupon shears, or is it a suggestion to the medical press that a large amount of material is secured by clipping. We appreciate very highly the present, and wish the Denver Chemical Company every possible success in the present and succeeding years.

Obituary

IRVING HENRY TAYLOR

Mr. Irving Henry Taylor, Canadian Manager of the Frederick Stearns Company, died after a short illness at his home in Windsor on January 4th. Mr. Taylor had been connected with the Frederick Stearns Company for fifty-one years, having been one of the original directors of that company. Mr. Taylor was a man of very high ideals and morals, was a keen business man, and made a great success of the Canadian end of the company, was beloved by those connected with him in the Canadian branch and most highly respected by those associated with him on the Board.

ROBERT L. GIBSON

Mr. Robert L. Gibson died in Toronto of pneumonia on February 18th, aged 73, and was buried in St. James' Cemetery on the 20th. Mr. Gibson had built up a large connection with the medical profession, with whom he was associated for the past twenty years. Mr. Gibson had been in failing health for a few years, but nothing pointed to a dissolution. He was ill less than a week. Mr. Gibson had represented for many years the Arlington Chemical Co. of Yonkers, N.Y., the Palisade Manufacturing Co. of Yonkers, N.Y., the New York Pharmacal Association of Yonkers, N.Y., the Duncan, Flockhardt Co. of Edinburgh, and the Maltine Co. of Brooklyn, N.Y. He had built up a very large trade for these companies, and was most highly respected by the medical profession. In the business world his ability was much appreciated, and socially his geniality and hearty welcome will be missed by very many friends.

DR. EDWIN G. KNILL, DETROIT

Dr. Knill was born in Markham, Ont., 55 years ago, and graduated from the Toronto School of Medicine in 1882. He practised in Detroit for twenty-one years, and his death occurred there on February the 10th from paralysis. He was a member of the general staff of Harper Hospital and of the Providence Hospital.

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Original Communications

THE DIAGNOSIS OF ENLARGED MEDIASTINAL GLANDS

HAROLD C. PARSONS, M.A., M.R.C.P., LOND.

The diagnosis of enlarged mediastinal glands has, in the last two years, been the subject of much study and more discussion. The possibility of such enlargement is generally accepted, and post-mortem findings give ample evidence of its existence. The importance of it as a latent focus, as an early lesion, and as the origin of further dissemination, can hardly be a subject for discussion, so universally is it recognized. The point is, can it be recognized during life? Do the signs and symptoms described justify a diagnosis, or are they only suggestive?

Perhaps the most striking point in the post-mortem examination of children, dead of tuberculosis, is involvement of the lymph glands. The two groups most frequently involved are the mediastinal and mesenteric, and this is not surprising, as the main recognized avenues of infection are by the respiratory and gastro-intestinal tracts. Where there is tuberculosis of an organ, the adjacent glands are practically always infected, but there is often glandular tuberculosis yet no gross lesion found in the area drained to these glands. Again, where there is disease of both glands and organs, that of the former is often more advanced than that of the latter, and the glandular lesion may give evidence of being the older.

We may look upon the lymph glands as physiological filters for the lymph drained from the various tributaries to the main lymph trunks. The organism or other foreign matter gains access to the exposed surface, and through an abrasion of the

protective covering, enter the lymph current, possibly by the aid of phagocytes, and, carried to the nearest group of glands, set up their infective disturbance, be it tubercle or what not. Whether this entrance can take place through a normal mucosa may be called in question, or whether such is aided by a transient catarrh of the surface, but the fact remains that glandular tuberculosis may be marked while there is little or no evidence of gross change in the corresponding structures. This suggests that glandular tuberculosis may be an early evidence of the disease.

The mediastinal and mesenteric groups are those most frequently tuberculous. A comparison shows that tuberculosis of the mediastinal is far more frequent than that of the mesenteric group. In one series of 254 tuberculous children, post-mortem findings showed caseous mediastinal glands in 209 (81%); mesenteric, 151 (59%). (Still.) In another (Carr), mediastinal 80%, mesenteric 54%. In a series of 67 cases, where one or other group was alone affected, mediastinal, 45, mesenteric, 22.

Schlossmann is very emphatic. We find, he says, the bronchial nodes, almost without exception, involved in every tuberculous child—post-mortem. He adds that these can frequently be shown to be the oldest foci of disease, and the origin of the later dissemination. The main point—he urges—is that the disease of these glands, just as foci in the lung, are frequently found completely healed. Weleminsky holds that tuberculosis of glands always precedes disease of the organ itself, even in the case of the lung and its lymphatics.

In speaking of tuberculosis of the mediastinal glands it is impossible to limit our considerations to one or other group, but rather to the whole lymphatic scheme of the thorax, consisting of the following groups of nodes, and their connections.

a. The tracheo-bronchial group, at the bifurcation of the bronchi.

b. The bronchial, along the main bronchi as far, it is said, as the fourth division.

c. The pulmonary nodes, at the hilus of the lung, also peribronchial in arrangement and extending into the parenchyma. These all receive their lymph from the lungs, bronchi and posterior aspect of the heart. Their relation to the bronchi, trachea and recurrent laryngeal nerve may be emphasized for further consideration.

d. Anterior mediastinal, about 12 in number, situated just behind the sternum and about the great vessels, about the right

innominate artery and vein, in the concavity of the arch of the aorta, and in the concavity below the right subclavian artery. Friedleben says that these last are very frequently affected, they drain the anterior portion of the diaphragm, the liver, pericardium, heart and thymus.

e. The posterior mediastinal, along the aorta and œsophagus, they drain the œsophagus, posterior diaphragm, pericardium and liver. All these groups are connected and disease is transmissible from one to the others.

Outside the thorax :

f. Tracheal and œsophageal, under sterno-thyroid muscle.

g. Jugular lymph nodes.

h. Supra claviular.

i. Superficial cervical.

j. Submaxillary.

It is said that these five cervical groups are connected with the intra thoracic or mediastinal groups, but this is not definitely proven. experimental injection has failed to prove such connection. In passing it may be said that clinical evidence of such is also wanting.

That tuberculosis of these cervical glands is fairly frequent no one will doubt, but as a frequent complication of pulmonary tuberculosis, by means of lymphatic extension, there is doubt. The association of the two, if present, is more rationally explained by the constant infection of the tonsils with pulmonary sputum, and secondary invasion of the cervical glands. Again, the mediastinal glands show a tendency toward right-sided involvement. Still notes this in 145 cases, in 113 the disease was more marked on the right side. According to actual figures cervical gland enlargement is about equal on the two sides, 51% right, 49% left.

The pathological changes in tuberculosis of adenoid tissue need not be dwelt upon in detail, but it may be said that the discreet and conglomerate arrangement of tuberculous formations is not alone a microscopic picture. The same tendency of tuberculous foci, and glands in particular, to fuse and form large masses or areæ is well recognized. When we realize the various groups comprising the mediastinal glands, it is possible to imagine how a general infiltration of the mediastinal contents may be brought about, increasing its density and producing pressure signs either in a general way, or upon the more important structures in this region. Schlossmann depicts the condition in a very striking colored plate in Pfaundler & Schlossmann, vol. 2.

In the tuberculosis clinic in connection with the Toronto General Hospital a considerable part of the work is the supervision of those who we know have been exposed to infection. The nurse brings such persons for examination, mostly children.

In the past few months a number of children so exposed have been examined, and we have been struck with certain signs, new to me, and difficult of interpretation. In their general condition the children were all below par, all had been exposed to infection, some in a marked degree, all had coughs, but, like most children, no expectoration. Examination of the lungs was practically negative, no active signs. There was an impairment of resonance over the upper sternum, and to the right, in the 1st and 2nd intracostal spaces, and in the same area varying venous humming murmurs on certain position of the head. A cutaneous tuberculin reaction was positive in all cases where applied.

I shall not weary you with details of the cases, but give the points in this general way, with this exception, that two boys, of 7 years and 8 years, each had lesions in the right apex which I had seen during the more active stage.

If tuberculosis of the mediastinal glands exists, can it be recognized? There is a reasonable amount of doubt, and such men as Henoch, Widerhofer and Schlossmann, while admitting the existence of the condition, and the importance of its recognition, are sceptical as to its actual demonstration by clinical examination.

The most complete picture of the condition is by Frederick Still. He describes that group of cases known to all of us, children of a more or less marantic type, pale, ill-nourished and ailing, but with no particular ache or pain, frequent coughs, an irregular rise of temperature from time to time, and, on examination, nothing found to account for the condition. Schlossmann ventures to say that this picture alone is truly characteristic of mediastinal tuberculosis.

In more marked cases there are definite symptoms. (1) Cough. This is a curious clanging cough; it has been likened to the brassy cough of aneurism in adults. Sometimes it is croupy. I have one such case. It is paroxysmal, strongly suggestive of whooping cough, but there is no whoop and no vomiting, *i.e.*, no climax to the attack. Neurath gives considerable space to the differentiation from this condition in discussing whooping cough.

The cough is from involvement of the recurrent laryngeal nerve by the enlarged tracheo-bronchial group.

(2) Inspiratory stridor. Still cites cases at length with marked stridor and the physical signs of the condition, and palpation of the mass above the sternum. With it there is a croupy cough and crowing noise on breathing.

I do not think it is well to attempt to classify, but I have been much impressed with certain types.

(1) The marantic type, already referred to; children below par physically, occasional fever, frequent coughs, capricious appetite, etc.

(2) Another group show persistent cough. There may not be anything peculiar about the cough, but the parents will tell you that the child has had a cough always. The lungs show nothing to account for it.

(3) A paroxysmal cough, simulating whooping cough, is the main feature in another group.

These classes more or less overlap, but the characteristics are quite striking.

As to physical signs.

(1) Impairment of note in 1st and 2nd right intercostal space close to the sternum is a frequent sign.

(2) Enlargement of superficial veins on right side, especially one in right second space.

(3) A Brûit—a venous hum in first right space or behind the sternum.

(4) Deficient entry of air into one lung, or lobe, or part of a lobe.

(5) Dulness at root of lung.

(6) Increased resistance over Manubrium.

(7) Palpation of edge of mass or gland in episternal notch.

The cases which I have observed show no such complete picture as the above, but certain of the more important signs were constant. Many of Still's cases must have been very advanced. In most instances there was the brûit. It is not so much a brûit as a venous hum. It is best heard in the first or second right spaces, and sometimes behind the sternum. It is propagated to the right, as if produced in the left innominate vein. It is not heard when the head is in the normal position, nor when the patient is lying down, but when erect, with the head thrown back as far as possible. The murmur does not appear at once, but after a short interval, and the veins of the neck often stand out prominently. This sign was first pointed out by Eustace Smith. He describes it as a venous hum, and explains it by pressure on the left innominate vein. The retraction of the head

throws the upper dorsal bodies forward, pulls the trachea upward, thus lessening the upper thoracic cone and increasing the pressure within. I have examined a large number of normal children and have not found this sign.

In one boy of 8 years the same hum is heard, but under different conditions; when the head is turned to the right the murmur is intense, but when turned to the left of median line it disappears completely, and by rotating the head the sound is turned on and off as by a tap; it is also produced by retraction of the head. In this child there is tuberculosis of the right apex, impairment of note to the sternum, adventitious sounds, and a marked tuberculin reaction. It may be that there are either pleural adhesions or an involvement of that particular group of glands in the concavity of the right subclavian artery. The murmurs extend up into the neck.

The *impairment of note* to the right of the sternum has been well marked in the cases I have seen, also behind the upper sternum. Still says that a finger's breadth of impaired note to the left of the sternum is common, explained by the great vessels, but to the right the sign is important. When there is impairment of the right apex, as in three of my cases, one must confess to a doubt as to enlarged glands or consolidated lung being the cause, but here the use of the X-ray is of assistance.

One will naturally question the dulness behind the sternum, as that being due to the normal thymic percussion (so-called). Blumenreich has studied this point. It is an impairment of resonance, not a dulness, triangular in shape, with the base between the sterno-clavicular joints, the apex in the mid-line at the level of the second rib, the left side passing about one inch further outward. In discussing enlargement of the thymus, Friedjung observes that enlarged mediastinal glands are a frequent cause of error in diagnosis.

The fact that in tuberculosis of the mediastinal glands the condition is more frequent on the right side, and the fact brought out by Friedleben as to the frequent enlargement of the group in the concavity of the right subclavian artery gives strength to this impairment of the percussion note to the right of the sternum as a sign of value.

The *enlargement of veins* I have not seen that could be interpreted as a definite pressure sign. I have seen it in many cases as a definite plexus over both sides, which is of no moment. One large vein in second right space is of greatest importance.

An *obstruction to the bronchi* and lessened entry of air into

a part of the lung I have also seen. Still mentions this, also the inspiratory stridor, and the edge of the mass palpable above the sternum, and yet with treatment complete recovery.

Dulness at the root of the lung and harsh breath sounds, or bronchial breathing, are important signs, but they are caused not alone by glandular enlargement, but by an extension of the disease to the adjacent lung.

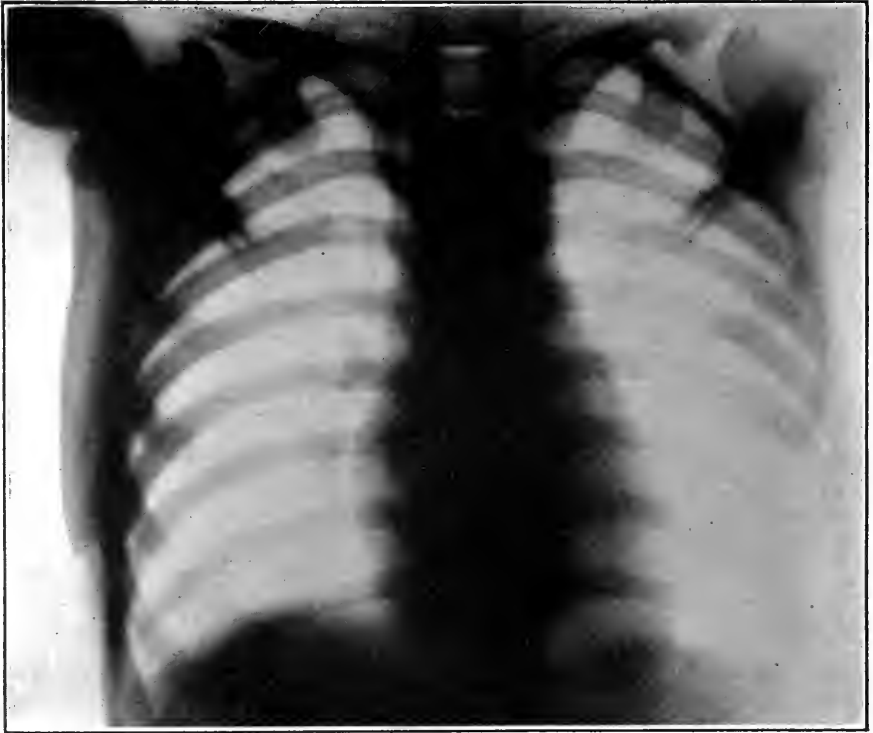
Increased resistance over the Manubrium would require a very practised hand. The sign at best would be only relative.

A sign of value has recently been described by Déspine of Paris. On auscultation over the vertebra prominens, while the patient speaks, the voice sounds are increased, a regular bronchophony, but after each word there is an added whispering echo. This is most striking when well marked. Déspine holds that the upper posterior groups of glands are first and most frequently involved, and that by reason of it these sounds are thus conveyed. The Eustace Smith murmur, as described already, is also a very striking phenomenon, varying in intensity in different cases. In many it is a low humming or roaring sound. It is not a systolic murmur, but a continuous sound, but it is punctuated by the systolic distension of the aorta, which momentarily increases the pressure in the mass and thus gives an idea of a systolic bruit. The hum between the punctuations is, however, not lost. In some cases the sound is much more high-pitched, almost whistling, but still with a distinct systolic punctuation. This is more frequently heard over the Manubrium.

As to the relative value of the different signs and symptoms, I cannot see why undue stress should be laid upon one to the exclusion of others, as some writers have sought to do. When we consider the different groups of glands which make up the lymphatic scheme of the mediastina and the important structures which pass through these spaces, anterior and posterior, it seems to me that the matter should be approached with a very open mind in much the same manner that the broad subject of aneurism of the aorta is considered, and value ascribed to any one sign as our knowledge of the possibility of anatomical changes suggests. I can see no reason why the Eustace Smith murmur should exist in every case, but where one sees, post-mortem, as I have in a specimen obtained a short time ago, the innominate vein resting on the front of a gland one inch in diameter and immediately in front of the vein another gland one-half inch long and nearly as thick, one can easily understand the production of the venous murmur.

In a more recent case no such condition was present; the glandular enlargement was mostly posterior and at the bifurcation of the trachea, the main symptom being a cough so spasmodic in character that the case was at first thought to be whooping cough. In the same way a croupy or brassy cough, an altered voice, a lessened entry of air into a lobe or part of a lobe, may each give its hint and lead to further investigation.

From what we have observed thus far in the examination of



No. 1. Showing the Normal Shadow at the Upper Sternum.

a large number of children, it can be said that these signs and symptoms are strongly suggestive, but hardly conclusive, of enlargement of the mediastinal glands. The X-ray gives the most valuable information and promises to be the deciding factor. The X-ray plate of a child's chest, according to Hochsinger, throws a heart shadow which "in its upper part" should just about approximate the shadow cast by the vertebral column. This is the normal in children who are entirely without symp-

toms, and in whom the thymic dulness does not extend beyond the edges of the sternum.

This applies to the right margin of the sternum; there is a certain shadow to the left in all cases, cast by the large vessels. Enlarged mediastinal glands show a variety of changes from the above. In the first place, a band of shadow is cast to the right of the sternum, sometimes dense, sometimes less so, it may be a half-inch, and in several we have had of more than an inch in width; this band of shadow passes down the right margin of the sternum to join the normal bulging of the heart to the right of the sternum at about the third rib.

In one of these cases the shadow was so marked that it seemed unreasonable to suppose that it was caused by mediastinal tuberculosis, but after months of observation we were enabled to examine the mediastinum and the X-ray picture was proved to be absolutely true.

Another picture commonly seen is a rounded or irregular shadow opposite the root of the lung on one or both sides. The normal line of the left border of the heart is concave at about the fourth rib, and the same may be said of the right. The shadows I refer to fill out these concavities in a striking manner.

In several cases large discrete rounded masses are seen in this situation.

It is very striking to note how frequently with evidence of marked mediastinal involvement the lung shows little or no evidence of change, and in one case of this nature we were able to watch clinically and by repeated X-ray plates the extension of the disease into the right lung, which was later confirmed at autopsy.

It is interesting to note that in a number of cases in which the condition was strongly suspected it has declared itself, in one by pointing in the second right space, and in another through an opening in the sternum (Still).

I have recently heard of two similar cases in practice.

In others the gradual extension of the disease has been observed, and post-mortem in a case of sudden suffocation a caseous gland was found wedged in the rima glottis.

The accidents that may happen are varied—ulceration into the œsophagus, or trachea, opening into the great vessels with miliary tuberculosis resulting; extension of the disease to lung, pleura or pericardium.

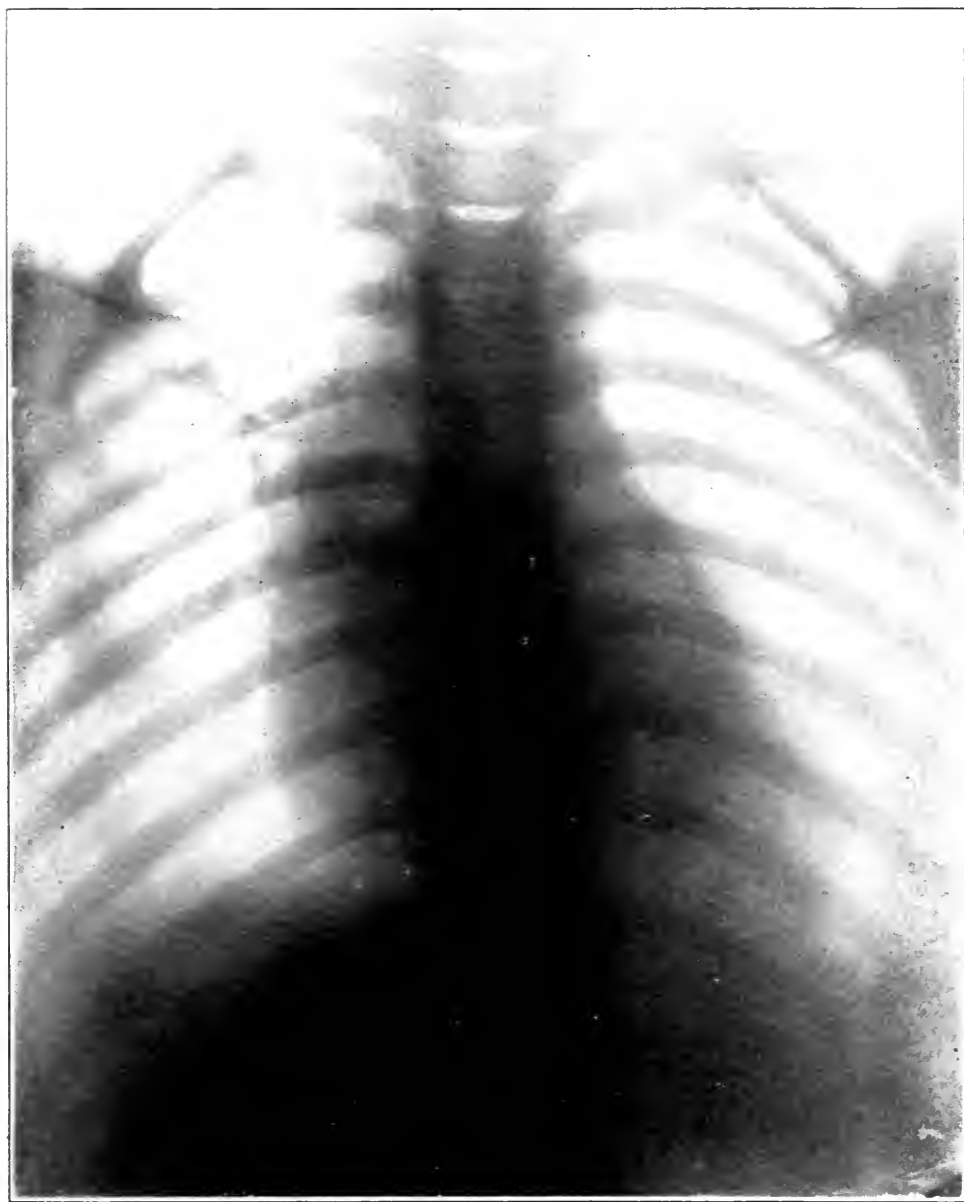
The diagnosis of tuberculosis of the lungs in children is

exceedingly difficult. Even in quite advanced cases the signs in the chest may be little more than those of an extensive bronchitis. There is reason to believe that recognition of mediastinal tuberculosis is recognition of an early stage, it may be that the lung is but little involved.

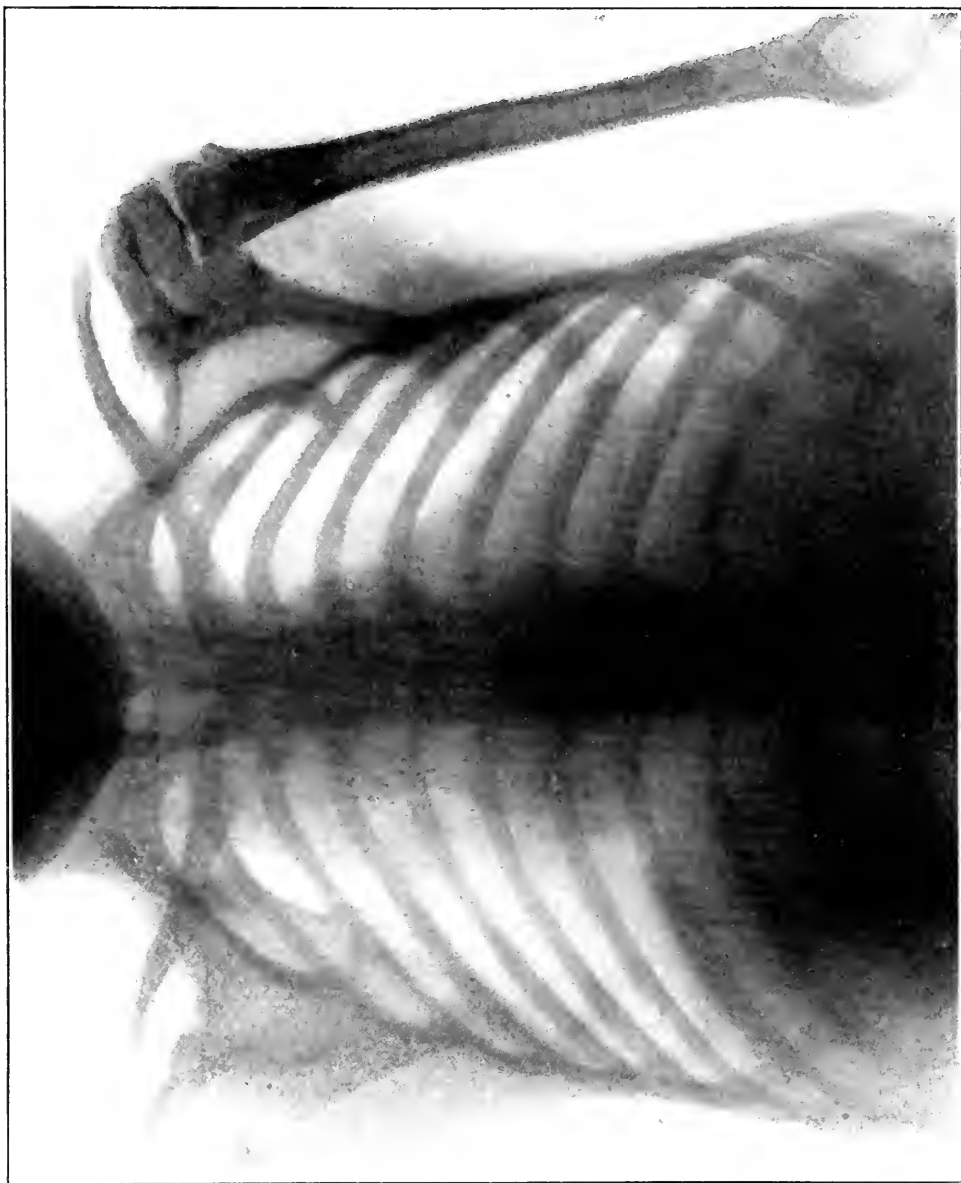
The recognition of the condition is surely most important. Tuberculosis of glands in any part of the body is looked upon with considerable concern, but how much more so when in such close contact with the lungs, the pleura, and those important structures into which they may pour their contents for general dissemination, and such we know to have occurred.

The point, however, is that post-mortem findings have again and again shown that recovery from this local tuberculosis is possible, and calcareous glands suggest that healing can occur even after caseation has taken place.

Prognosis generally is looked upon as good, in proportion to the promptness of recognition and action. The treatment is that of tuberculosis generally, with promise of a particularly fruitful field for the use of tuberculin.



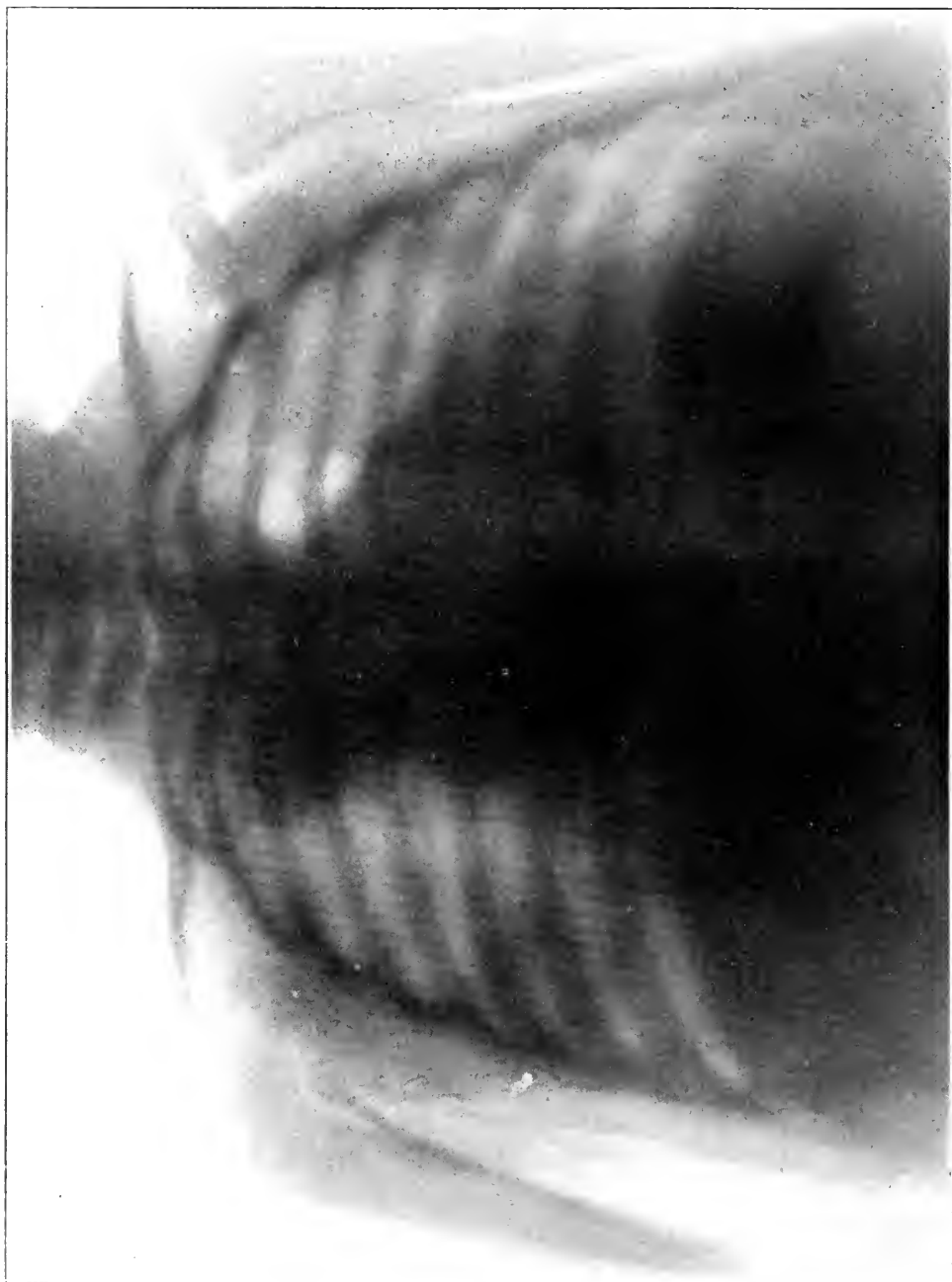
No. 2. Shows Broad Band of Shadow to Right of Sternum also Foci of Disease in the Right Apex.



No. 3. Child, 4 Years, Shadow well defined.



No. 1. Child of 1 Years, Lungs Clear, Marked Shadow to Right.



No. 5. Showing Marked Band of Shadow to the Right of the Upper Sternum. The Shadow on the Right Lung is from an Adherent Pleura.

THE PREPARATION AND AFTER TREATMENT OF ABDOMINAL SURGICAL CASES*

BY W. G. ANGLIN, M.D.,

Professor of Surgery, Queen's University, Kingston

A surgical operation which requires that an opening be made into the abdominal cavity, no matter how lightly it may be looked upon by the surgeon of large experience, must always present to the minds of the great majority of prospective patients a very pyramid of worry and anxiety as to the probable outcome.

An important part of the preparation for such an operation should, therefore, consist in the creation of an optimistic outlook by the surgeon in whom the patient places his or her confidence. This complete confidence in the ability and integrity of the surgeon who is to perform the operation will prove eminently helpful in inducing the necessary optimism, and this feeling will be further increased if the surgeon can give to the patient and the patient's friends a definite diagnosis in the case, and smilingly predict a favorable result, as far as human knowledge and skill can warrant such a prediction.

For, we must admit that the state of the nervous system has a considerable influence on the amount of shock after a serious operation and a state of undue anxiety or the fear of a fatal termination creates an unfavorable condition for operation.

One can imagine no more disquieting effect upon a patient than to tell her that her diseased state may be one of two or three pathological conditions, but upon making an exploratory incision the difficulty will probably be cleared up, and if practicable the operation will be proceeded with. One author gives an example of this sort of diagnosis, or rather lack of diagnosis, which would be amusing if it were not so serious a blunder. "The case may be one of extra-uterine pregnancy, pyosalpinx, a hæmatocele, an ovarian tumor, or a fibroid tumor of the uterus, and strangely enough the sequel showed that it was none of them."

A correct diagnosis is therefore an essential preliminary in the preparation of a patient for an abdominal operation, and the cases are very few in which such a diagnosis cannot be made, if sufficient time and painstaking enquiry be given to the examination.

The history of the patient should be gone into thoroughly.

*Read at a meeting of the Academy of Medicine, Toronto, March 7, 1911.

Much valuable information may be gained by patiently listening to the early symptoms and progress of the case as described by the patient, and the required deductions made therefrom; for certainly much that is misleading may be contributed.

The general appearance of the patient is to be studied and such questions asked as: "What first drew his attention to the abdomen?" "Was it discomfort, pain, or swelling?" The condition of the thoracic organs should also be inspected, and an urinalysis and blood examination made by the surgeon himself, or by some one competent to do so. In some cases it will be deemed advisable to have a separate examination made of the urine from each kidney. Neglect of the examination of the urine, except in emergency cases, is inexcusable. It serves as a guide to the anaesthetist, and may reveal to the surgeon the presence of some morbid process overlooked from lack of symptoms in the regular physical examination.

Urine.—Quantitative estimation from twenty-four hour samples will be useful in many cases, and the microscopic examination of the urine will give information as to the presence of casts, pus, epithelium and various forms of crystals, which will enable the surgeon to complete his diagnosis.

In cases in which there is evidence of inflammatory processes, it is very important as a preliminary to operation to have a blood count and the degree of leucocytosis estimated. In cases of suspected hemophilia, or in cases where jaundice is a symptom, the coagulating time of the blood may be tested by Wright's Coagulometer, and the test is not a difficult one to make. The time of coagulation of normal blood is 3-5 min. If found to take a longer time a course of calcium salts may be tried. Citric acid lessens tendency to thrombosis.

In cases where intestinal symptoms are prominent, a routine examination of the patient's stools is advisable, and one of the tuberculin tests may be tried, and of these the skin reaction of Von Pirquet seems to be the most suitable for general use.

Then the surgeon will give his attention to the direct examination of the abdomen. The patient should be placed on a firm mattress in the supine position with the lower limbs fully extended, the shoulders being on the same level or but slightly raised, and the abdomen thoroughly exposed. With warm hands the surgeon then proceeds to palpate with gentle pressure, extreme gentleness is always advisable, systematically going over the various regions of the abdomen, being careful that the tips of the fingers be kept elevated, as otherwise the tissues will resent such handling and your object will be defeated.

By a process of elimination an approximate diagnosis should now be arrived at. Then the position of the patient may be changed as desired and percussion and other methods used as required to aid in the decision. Repeated examinations on different days will prove helpful where an element of doubt remains after the first examination, and it is the part of wisdom in any doubtful case to call in consultation a colleague upon whose judgment you can rely. It is not within the province of this paper to discuss the question of differential diagnosis of abdominal conditions which may require surgical interference, but in all cases we should endeavor to be exact in our diagnosis. We should know for example the exact connections of a tumor.

The exploratory incision, as such, is not to be lightly recommended, but it may be required in exceptional circumstances where it is impossible to say what is the nature of the growth, or in those cases where one cannot be sure whether a growth can be removed or not.

Granted that a diagnosis has been arrived at and operation advised, what is the next step in the preparation?

While the thought of operation is always formidable to the patient, nowadays there is little trouble experienced in inducing the patient to take advantage of the facilities which the modernly equipped hospital affords, and so in the elective operation we get our patient into the hospital at least two or three days prior to the morning of the operation.

The patient becomes accustomed to her surroundings; the bright, comfortable room with cheerful and capable nurses in attendance appeals to the patient's sense of the fitness of things, and the operating room, devoid of all mysteries, can be shown to the patient either prior to or at the time of operation.

The preparation is begun by the administration of a hot tub bath, and the patient is made comfortable in bed. Special attention should be paid to the condition of the mouth and teeth. The careful regulation of the diet and the emptying of the intestinal canal will now be under proper supervision, and the urinalysis and the blood examination can be made, and just here let me say that a course of preparation which involves semi-starvation and a too vigorous catharsis is to be condemned, as the patient is undoubtedly weakened and depressed thereby, and post-operative paresis with its attendant ills is more likely to be induced.

Let me quote the authority of Ochsner on this point. He says: "As a rule long continued preparatory treatment leaves the patient in a much less favorable condition for a surgical

procedure than a very short and simple preparation, which serves to put the kidneys, the skin and the alimentary canal in a condition favorable to the elimination of the waste products. His strength is not impaired by confinement, and his nervous system has not suffered by looking forward to the operation for a long time. Some years ago I had an opportunity to observe the effect of waiting for a number of days, and sometimes for several weeks to allow the patient to get into a more favorable condition for operation, and I am positive that, as a rule, the practice is bad."

On the other hand, I always refuse to operate upon a patient unless she has been in hospital for at least two nights. The diet up to the day previous to operation should consist of easily digested material in sufficient quantity, given at regular intervals, so as to give a feeling of being well nourished. From this diet milk and other foods which we know are apt to leave much residue are to be eliminated. On the day before operation the diet should be limited to liquids, strong broths—beef, chicken or mutton and a liberal supply of water should be given to the patient also.

On the morning of the operation, if the hour is to be near noon, a cup of broth or tea without milk may be given some hours previously, except in cases of operation on the stomach and duodenum, and in gall bladder cases, where lavage is indicated. In cases where there is marked jaundice, calcium chloride in doses of one dram, given in a pint of hot water three times on the day previous to the operation, is recommended to increase the coagulability of the blood.

As to catharsis, some operators of known repute are content to order a dose of castor oil ($\frac{3}{4}$ 2) on the afternoon preceding the operation, following this by a thorough cleansing of the lower bowel by enemata. Others prefer to have a decided laxative effect by means of Calomel, grs. 2 to 3, given two nights before operation and followed by a saline next morning. The night before operation a simple enema of soap suds should be given, and the patient not further disturbed before operation. In cases of emergency operation the lower bowel should always be emptied by enemata, repeated until a satisfactory result is obtained. In all cases the urine should be voided or withdrawn by catheter just before operation.

PREPARATION OF THE FIELD OF OPERATION.

The preparation of the skin demands the utmost attention, the object being to render it as nearly aseptic as possible. The

thorough mechanical cleansing of the patient's skin with soap and plenty of warm water is of primary importance in the preparation of the field of operation, after all the hair of the part has been removed by shaving or depilation. Some surgeons prefer to leave all preparation until the morning of the operation, and claim to have adopted this practice for long periods without having a single wound infected.

A familiar practice that has given uniformly good results is the following:

On the afternoon of the day preceding the operation the patient, after a hot tub bath, has a green soap poultice applied, large enough to reach from the ensiform cartilage to the pubes and from ilium to ilium. This is left on for two hours, if the patient can bear it. The nurse then removes the poultice and surrounds the operation field with sterile towels, and with her hands surgically clean, using gauze pads (not nail brush), scrubs off with sterile water. Special attention is paid to the umbilicus, using hydrogen peroxide for the cleansing, next to get rid of fat use ether and alcohol or acetone, then 1-1,000 biniodide of mercury or bichloride solution, 1-2,000, and lastly, sterile water. A towel, wrung out of 1-2,000 bichloride solution, is then placed over the field, and this is covered by a dry towel, and an abdominal binder with perineal straps applied. In the case of a female the vagina has also received special cleansing.

In the operating room the patient arrives, protected by a pneumonia jacket, a sterile gown and long stockings. The nurse now places rubber sheets in position above and below the field of operation, and removes the binder and shield. The assistant surgeon then scrubs up the field with ethereal soap and sterile water, using gauze pads, a Kelly Pad being in position, and follows with alcohol, bichloride and sterile water. The Kelly Pad is then removed by one of the nurses and a dry pad placed under the back and shoulders of the patient. Sterilized towels are placed over the rubber sheets and a laparotomy sheet and towels cover the patient from head to feet.

Another method: After thorough mechanical cleansing with soap and water, in a clinic which I recently visited, the only additional procedure is to paint the whole area with tincture of iodine, and this painting is repeated after an interval of a few minutes, just prior to making the primary incision. The claim is made that no infection has appeared after this practice, in many months of continuous abdominal surgery.

At the same hospital, in another operating room the practice after the preliminary cleansing is to use Harrington's solution for about three minutes, following this with scrubbing the field with 70% alcohol, using gauze pads, then leaving an alcohol saturated pad over the site of the incision while the sterile sheets, towels, etc., are being placed over the patient; and equally good results were claimed for this procedure.

In regard to the solution known by his name, Dr. Charles Harrington, of Boston, says that he made a careful comparative study of all the antiseptics used at present, and as a result of that study devised a mixture which, on experimentation, proved to combine the greatest germicidal action with the least irritation.

The formula is:

Corrosive sublimate	0.8 gm.
Commercial alcohol	640 c.c.
Hydrochloric acid	60 c.c.
Water	300 c.c.

This mixture contains corr. sub. 1 in 1,250 in a solution made up of 6% hyd. acid and 60% absolute alcohol.

Sixty per cent. alcohol will destroy staphylococcus aureus in four minutes; 10% hyd. acid is equally effective, and 1-1,000 corr. sub. will kill it in three minutes.

Why a combination containing all these substances, but with lesser proportions of the salt and acid is so much quicker in its action than any one of them alone is an interesting question of physical chemistry. But such is the fact.

After giving the hands an ordinary wash and soaking two minutes in Harrington's solution, all culture tests, even under the nails, are sterile. Robert T. Morris is strongly in favor of the use of depilatories for the removal of hair instead of the use of a razor. An efficient depilatory, simple to prepare, is composed of fresh unslaked lime, 10; pulverized starch, 10, and sodii sulphid crystals, 3. These ingredients are separately pulverized, mixed, and kept in a bottle dry. When needed for use enough water is added to form a thin paste, and spread on the part to be denuded about one-eighth inch thick by means of a wooden or glass spatula. At the end of five minutes the paste is washed off with sterile water, after which the usual preparation proceeds.

Morris says: "When the depilatory has just been wiped away from the skin, after about five minutes application, the melted hair and superficial epithelium come away together with any dirt that lies within the area acted upon. The skin is then

as sterile apparently as it would have been after the labor and prolonged methods of other preparation, and we have entirely avoided the disturbance caused by shaving. The time saving element in itself is of consequence. Morris says: I have taken the hair from an entire leg in less time than it would have taken to have shaved the tenth part of it, to say nothing of the fact that the leg was all ready for operation. On the whole the use of germicidal depilatories is such an advance over the older methods of preparation of the skin of the patient that I believe it to be the coming method, and my nurses and assistants would not like to go back to the troublesome methods that are as yet in common employment."

It is very important that the patient should obtain a good night's sleep before the operation, and she should not be disturbed by any preparation in the early morning. Not as a routine, but in selected cases of markedly nervous type, I give a hypodermic H. M. C., full strength at 9 p.m., and repeat this one hour before operation. The patient comes to the table in a somnolent condition, takes the anæsthetic easily, and requires a very limited amount for a prolonged operation, in some cases only two or three drams of chloroform.

The patient should be warmly clad while on the operating table, and the table should be well padded, as by this means much of the post-operative discomfort in the way of backache and general stiffness of the muscles will be avoided.

Bidwell, a London surgeon, has recently stated that in order to lessen the post-operative shock, and the tendency to paralytic dilatation of the intestine, subcutaneous injections of ergot should be given before and after the operation.

An aseptic, non-irritating fluid extract Parke, Davis & Co's Ergone is used. Give thirty minims hypodermically twenty-four hours before operation, and repeat the dose every eight hours for three days. The advantages claimed for the use of the drug are:

1. There is less post-operative nausea, vomiting and general shock.
2. Tympanites does not occur, as the ergot causes contraction of the involuntary muscle fibres of the intestine.
3. It relieves pain almost as efficiently as morphia, or if pain be not relieved, a very small dose of morphia will be efficacious, since it produces a nerve calmness.
4. The bowels are opened with greater ease in those cases where ergot has been given, in some cases no aperient being

necessary. The method seems worthy of consideration, especially as it is devoid of risk.

Now as to the preparations to be made by the surgeon. He should, as far as possible, come to the operating room with a feeling of well being—free from mental or bodily fatigue. If he has had to journey fifty or sixty miles in an auto, he should be accompanied by a chauffeur.

He should change his clothing, and his arms should be bared. Too much attention can scarcely be given to the disinfection of the hands and arms with nail brush and ethereal soap.

The finger nails should be well trimmed and cleaned. After the mechanical cleansing, the hands are placed for a few minutes in 1-1,000 solution of biniodide of mercury, or Harrington's solution, or the routine of permanganate, oxalic acid, bichloride solution and sterile water may be followed. The use of rubber gloves, prepared by boiling for ten minutes, has now become universal, and the forearms should be protected by sterile sleeves. The use of gloves however does not warrant any relaxation in the attempt to render the hands aseptic. A sterilized gown is adjusted, and many surgeons also wear caps and gauze veils, which are necessary if the surgeon has a cold, or requires to do clinical teaching during the operation.

The thorough technique of every well appointed operating room should be observed by all who have to do with the operation, bearing in mind the well known statement that "A chain is no stronger than its weakest link." Instruments and needles should be boiled in water, to which washing soda, a teaspoonful to the pint, has been added. Knives may be sterilized by placing in pure carbolic and then in alcohol.

Sterilized gauze sponges of different sizes and in definite number are employed.

Ligatures and sutures should be absolutely reliable and prepared to the entire satisfaction of the surgeon, whether of silk, Pagenstecher's thread, catgut, silkworm gut or horse hair.

Some surgeons insist on the personal supervision of the preparation of the catgut used, while many depend on the catgut supplied in glass tubes by reliable makers.

TREATMENT AFTER ABDOMINAL OPERATIONS.

Our consideration of the after treatment begins when the dressings are applied, and the patient has been carefully replaced in a warm bed, in a warm room, and surrounded by hot water bottles. In a case which does not call for drainage the

dressings are not removed for ten days, when the stitches are taken out, and another dressing re-applied.

A nurse should be in constant attendance upon the patient until full recovery from the anæsthetic has taken place and for the first twenty-four hours. The hot water bottles must not be too hot, nor placed too near the patient. They should be covered with flannel, and a blanket should intervene between them and the patient's skin to avoid any possibility of burns. A good-sized pillow should be placed under the patient's knees, and the head kept low and turned to one side, while the foot of the bed is raised on blocks about six inches.

If the patient is perspiring she should be gently rubbed with a warm towel. Patient not necessarily kept upon her back.

Some vomiting is to be expected. It is the custom of some surgeons to let the patient inhale one dram of vinegar from a folded towel immediately after the anæsthetic has been discontinued, and it has been noted that freedom from vomiting was a frequent result.

It is of benefit in most cases to administer an enema of salt solution before the patient leaves the operating table, or immediately on the return to bed. After recovering consciousness sips of hot water may be given at frequent intervals, and to most patients sipping hot strong black coffee is agreeable. The giving of ice water or pieces of ice to suck is not good practice. It causes hyperæmia of the pharynx and increases rather than relieves the patient's thirst.

If vomiting persists the use of chloretone in 10 grain doses often gives good results.

Vomiting continuing after the second day calls for flushing out of the stomach, either by giving the patient to drink a large glassful of hot water, in which is dissolved a teaspoonful of bicarbonate of soda, which fluid is usually promptly returned, or by careful lavage of the stomach with hot boracic solution followed by sterile water, the fluid being removed by syphon action. In cases of stomach operations, after the first few hours the patient should be propped up in bed, or placed in the full Fowler position.

Shock, if present, is to be treated by early feeding, warmth of body, hypodermic injections of strychnine, and best of all by means of normal saline solution, given either (1) by ordinary enema to which some brandy may be added. (2) by subcutaneous injection. (3) by intravenous injection. or (4) by continuous rectal injection. This latter method is now very

popular, and many surgeons use it as routine treatment after all abdominal operations.

The mode of giving, and the apparatus employed, are familiar to all of you, the fluid being allowed to enter the rectum at the rate of one pint in one hour, and being delivered at a temperature slightly above normal temperature of the body. The flow is stopped at intervals of two hours for a period of two hours, the rectal tube being left in position continually.

Continuous proctoclysis does good by increasing the blood pressure, relieving thirst, stimulating the lymphatic flow and diluting any toxins present in the blood. If the patient is evidently suffering much pain, the judicious treatment will be to relieve by a small hypodermic of morphia.

As to feeding, for the first twelve hours nothing but sips of hot water. After that, albumin water or barley water may be given every hour or so, in small quantities at a time, and no solid food, such as fish or chicken, until the bowels have been well moved. In cases of operations upon the stomach the giving of solid food may well be deferred until the second week. I have a memory of asking a gastro-enterostomy patient at the Mayo's Hospital, "What did you have to eat the first week?" and hearing his graphic answer as he gazed out of the window of his room, "mountain scenery mostly!"

The bowels should never be allowed to become constipated after the operation. It is my custom after twenty-four hours to give calomel, 2 or 3 grains, in divided doses, $\frac{1}{4}$ grain every half hour, following this in two hours by Sal Rochelle, 2 drams in half a glass of hot water, and in addition, order a simple S. S. enema.

By thus securing normal peristaltic action of the bowels, we may avoid the condition of pseudo-ileus. If a purgative enema is indicated, I have secured the best results from ox-gall, one-half to one dram, given in a simple S. S. enema.

A rectal tube may be inserted at intervals to relieve flatulence, and an enema of castor oil and turpentine, each one ounce in a pint of soap suds, may be given with the same object in view.

Later on, in the management of the case, much comfort will be given to the patient by starting the daily bowel movement with an injection of 2 to 3 drams of undiluted glycerine.

Symptoms of obstruction, flatulence, distension with vomiting, may be due to local paralysis of a small loop of intestine.

If this condition is not relieved by withholding food by the

mouth and the regular use of stimulating enemata, the surgeon should be suspicious of obstruction due to adhesions, or kinking of the bowel, and this, of course, will demand prompt surgical interference.

Then, we have to bear in mind the possibility of arterio-mesenteric obstruction, especially when the patient has been kept for some time in the Fowler position. In this condition the symptoms are characteristic, the vomiting is in large quantities, and there is marked distension of the epigastric region with flat lower abdomen.

The etiology is explained by the slipping of the small intestines down into the pelvis, thereby causing the superior mesenteric artery and the mesentery to both drag tightly across the duodenum, thus blocking the exit from the stomach. The stomach then loses its tone and dilates, and copious vomiting follows. It is well to recognize this condition, for early and complete relief of the symptoms is obtained by changing the patient from the Fowler to the Trendelenburg position.

As in the preparatory treatment, so in the after care, the nurse should give special attention to the mouth and teeth, cleansing the teeth with an antiseptic powder and brush, and using a mouth wash of listerine or glyco-thymoline. In this way the occurrence of septic broncho-pneumonia and parotid bubo may be avoided.

The prevention of bed sores may be left to the care of the competent nurse in attendance.

Peritonitis as a complication should not be feared in clean cases which have been properly handled, but in septic cases, or where there has been general peritonitis from the outset, the condition should be combated by providing free and ample drainage, the maintenance of the Fowler position, and continuous proctoclysis.

The decision when and how to drain the abdominal cavity is one of the arts of surgery, and each individual case will require most careful consideration.

Selected Articles

RENO-URETERAL AFFECTIONS; HOW TO ARRIVE AT A DIFFERENTIAL DIAGNOSIS

BY PROFESSOR F. CATHELIN, M.D.

Senior Surgeon to the Urological Hospital, Paris.

For the purpose which we have in view, let us suppose a patient applying at the hospital for some affection of the kidney. How ought we to proceed in order to arrive at an exact diagnosis of the morbid state? How are we to determine the semeiological value of each individual symptom? and, lastly, what exploratory examinations must we make in order to control the patient's statements? I hope to provide the thread that will guide the novice through the intricacies of the clinical labyrinth.

I. *As to Function.*—The first sign and, for the patient, by far the most important, is *pain* which may be spontaneous or provoked by movement or pressure in the costovertebral angle. It is rarely complained of in front but often radiates along the ureter, obliquely downwards and inwards, or along the abdominal genital nerves running round the body.

In other cases it extends down to the neck of the bladder or along the spermatic cord as in cases of calculus, for instance, when it is due to the presence of the genital twig of the abdominogenital nerve. The pain may even be complained of in the other kidney by sympathy (Guyon's reno-renal reflex) thus introducing an element of confusion into the diagnosis. The pain may be slight, aching, or it may supervene in paroxysmal attacks constituting renal colic (hydronephrosis) or nephritic colic (passage of a stone). Trifling as a rule in nephritis, cancer and certain common forms of renal tuberculosis, it is specially pronounced in certain cases of floating kidney, in hydronephrosis and in renal calculus, in which it is increased by walking or riding, and movements in general.

II. Then come macroscopical changes in the urine, which may be purulent, hæmaturic or laden with gravel, these three symptoms occurring either separately or variously combined, as roughly shown in the following table:—

Renal tuberculosis: Pus and spontaneous pink blood stain.

Renal cancer: Black blood with clear urine in intervals.

Renal gravel: Pus and pink blood provoked.

Hydronephrosis: Pus when the urine comes away without any trace of blood.

Naturally, I have omitted any mention of non-purulent states, such as phosphaturia, with muddy urine that clears up when an excess of phosphoric acid is added, and red phosphaturia, which may lead one to suspect the presence of blood.

Pus from the kidney in pyelitis and pyelonephritis of bacillary or calculous origin is thick and greyish; it is still thicker and of a greenish hue in pyonephrosis of similar origin.

The urine is tinged pink, but slightly in calculus and tuberculosis, whereas, in cancer it may be as black as ink. The existence of elongated clots from the ureter is, of course, a valuable sign.

The expulsion of gravel is also a valuable symptom. Sometimes they are little rounded reddish stones typical of medical lithiasis; sometimes they are greyish, phosphatic; while in another category of cases the absence of gravel shows that the trouble is due to a big stone calling for surgical intervention.

Physical Examination.—This examination, which follows immediately on the preceding, is based on palpation of the kidney to detect the presence of floating kidney, a distended subcostal kidney or an indurated, irregular, often mobile, cancerous kidney.

The investigation of tumors in the hypochondria is sometimes hampered by the presence of the liver on the right and the kidney on the left side. Still, thanks to modern methods of exploration, it is possible to determine the exact situation of the thoracic or subcostal hypertrophied kidney, its mobility, its smooth or lobulated surface, its resistance, or softness, etc.

Great assistance will be derived from bearing in mind the ureteral painful spots, which are three in number: the superior or perumbilical spot corresponding to the kidney pelvis; the medium or iliac spot corresponding to the intersection of the ureter; and the big external iliac vessels and the inferior or vesical spot corresponding to the intra-vesical or interstitial part of the ureter, felt *per vaginam* in the woman, and in the rectum in man.

III. Urinary Analysis.—This investigation has a triple bearing, comprising, as it does, the chemical, histological and bacteriological circumstances.

The chemical part includes the proportion of the various constituents of the urine, especially urea and the chlorides, which have such an important bearing in estimating the state of the

renal function, also the proportion of abnormal constituents, such as sugar and albumin, but the latter is only of importance when present in abundance and when the urine is clear. In the opposite event the albuminuria is secondary, and possesses no significance in respect of the integrity or otherwise of the renal parenchyma and the glomerulo-canalicular apparatus. The specific gravity and reaction will, of course, be noted.

The histological investigation will reveal the presence of pus, and more particularly of casts which, when seen, indicate grave disturbance of the renal filter. The presence of epithelial cells, crystals and parasites may also have their importance.

The bacteriological investigation is of secondary interest because the one organism that we are interested in finding is usually conspicuous by its absence, viz., the tubercle bacillus. We may meet with cocci, coli bacilli and the ordinary microbes of secondary infection, all of which may serve to confirm the diagnosis.

IV. *Inoculation Tests*.—Inoculation of the guinea-pig is indispensable to the diagnosis of urinary tuberculosis, especially in doubtful cases, and it is, indeed, the only test that is not liable to error. It has often occurred to me to make repeated negative examinations of the kind in cases which showed every symptom of renal tuberculosis, and operation has shown that the hydronephrosis was of some other origin. The inoculation is made under the skin of the belly or in the groin, the centrifugalized clot of the urine being employed for the injection.

V. *Radioscopic Examination*.—If there be any reason to suspect a renal calculus we must have recourse to radiography, which is the only means at our disposal of deciding whether or not the patient has a phosphatic or oxalic renal calculus. Even uric acid calculi when coated leave a shadow on the plate and the interpretation of these shadows is a science by itself.

VI. *Cystoscopic and Meatoscopic Examination*.—This examination is absolutely necessary before undertaking any operation on the kidney in order to eliminate the existence of a vesical lesion, and on the other hand in order to know which kidney to suspect. It is possible to see whether the pus comes from one side or both, and so settle the question which organ is to be explored.

VII. *Division of the Urine*.—We now come to the *crux* of the renal question, for no operation ought ever to be undertaken on the kidney without previous recourse to the division of the urine. It enables us first and foremost to establish the fact that

there are two kidneys—for I have trustworthy notes of 325 cases of single kidney—also the respective value of the two organs. This method of exploration affords thoroughly reliable data, and enables us to make a firm diagnosis of the nature of the affection and the anatomo-pathological value of the damaged kidney. Without going as far as Fenwick, who draws a diagram of the kidney he is about to remove for the information of his students, it is usually possible to describe the principal lesions that will be found merely on the strength of examination of the urines obtained by intra-vesical division. This is specially useful in cases of tuberculosis. The object of this division of the urine is not so much to decide which is the damaged kidney, but to enable us to ascertain the functional value of the other organ, the kidney upon which the whole burden of elimination will fall after operation.

From what precedes it will be seen what a difference there is between this branch of surgery and that of fibroma or appendicitis. In the latter, the patient can safely be operated the day after he or she is seen for the first time, whereas in urinary surgery it is necessary to keep the patient under observation for a time, and he must be given time to cleanse his system of accumulated poisons. Even with the methods of investigation just related one meets with cases in which, in spite of everything, the diagnosis remains doubtful.—*The Medical Press*.

PERCUSSION OF THE THORAX IN SUSTAINED INSPIRATION—A NEW DIAGNOSTIC SIGN

BY EDGARD HIRTZ, M.D.

Physician to the Necker Hospital, Paris.

Notwithstanding the significance of the differential diagnostic signs of congestion of the lungs, hardly a day passes but the clinical observer hesitates over a suspicious dulness at the base. He can only form a trustworthy opinion on the existence of an effusion or the remains of an effusion by making an exploratory puncture. The frequent repetition of this mode of exploration is not free from inconvenience moreover, as Mosny has pointed out, puncture may give a negative result even when liquid is present as in cases of encysted effusion. It is therefore not pathognomonic.

Apart from the difficulty that there may be in distinguishing slight effusion from congestion or œdema of the base of the lung, the significance to be attached to certain cases of dulness of the apex is fully as difficult. Many an error of diagnosis and prognosis has been made, and but too often suspicious infra-spinal or sub-clavicular dulness has been incriminated as tuberculous, whereas it was due in reality to fugitive congestion in the course of Bright's disease or heart affection. A sign that will allow of our overcoming these difficulties is sure of a welcome, and it occurred to me that the Academy of Medicine would be interested to hear of it.

The paper which I have the honor to bring before you could not very well comprise the hundreds of observations collected by me since 1876, when I was *interne* in the service of our venerated master Guéneau de Mussy, who had noted the usefulness of this sign in certain cases of pleurisy. I have devoted a good deal of attention thereto and have extended its application to the explanation of certain cases of dulness over the apices. Still more recently, in a case of spleno-pneumonia, it enabled me to discard the diagnosis of copious pleural effusion that had been arrived at by several experienced clinicians.

The sign afforded by percussion of the thorax in sustained inspiration was vaguely foreseen by Leopold Avenbrugger, a Viennese physician, in a paper written as far back as 1761, but he never turned it to any practical use. I am enabled to give you the very words of his monograph in Latin, which I unearthed

at the National Library. "When you wish to percuss the thorax of a subject, do so first while he is breathing naturally, then direct him to retain the air he has breathed in. The difference in the sound observed during inspiration will be of great assistance to you in forming an opinion." In the 16th proposition of his paper Avenbrugger adds "tell the patient to take a deep breath and to hold it; when the inspired air is retained, the spot still gives the sound of tapping on flesh (dulness) you will conclude that the disease extends deeply into the chest."

He expresses himself in almost the same terms in his 17th proposition. Nevertheless, no assistance could be obtained from this sign in respect of diagnosis. Avenbrugger's paper was translated into French by Roziéré de la Chassagne, a Montpellier physician, in his manual, "Des Pulmoniques."

It was re-translated with a copious commentary by Corvisart in 1808 in an in-octavo volume bearing the title "A New Method of Recognizing Diseases of the Chest by Percussion of This Cavity."

My chief, Dr. Guéneau de Mussy, in Tome IV. of his medical clinics, points out that Avenbrugger drew no practical conclusion from the mode of exploration which he recommended.

Guéneau de Mussy had noted that the inspiratory manœuvre was apt to render resonant a chest that remained inert after the absorption of a pleuritic effusion. This great clinician was of opinion that the superficial parts of a lung that had long been compressed, covered with neo-membranes, tended to remain in atelectasis during ordinary inspiration, in a state of flaccidness that did not allow of their resounding with the thoracic wall.

In the space at my disposal it is hardly possible to mention the very large number of observations in which the sign of thoracic percussion in a state of sustained inspiration has enabled me to distinguish quite clearly between stasis, congestion or œdema of the lung and inter-pleural effusion.

The doubt can be cleared up without having recourse to an exploratory puncture. When the patient is breathing normally we find on percussion a high note at the base of one lung, the breath sounds are obscure and one is led to suspect simple or double pleurisy or hydrothorax. Under the influence of forced, sustained inspiration, the very spot that appeared dull on percussion becomes resonant. There can be no question of an effusion, it is the lung itself that is at fault.

How often when I have been explaining this simple experiment to my students has exploratory puncture confirmed my diagnosis!

When, on the contrary, carefully performed percussion under sustained inspiration raises the note no doubt remains that we are dealing with a pleural case; the not very copious effusion is compressed by the forced inspiration and comes into contact with the wall. It is easy to familiarize one's self with this sign and to turn it to account, and everyone who has practised it with me has adopted this mode of investigation. There is consequently no obvious reason why it should not come into general use.

It may be well for the purpose of demonstrating the value of percussion in sustained inspiration to mention a few typical instances. Take, for instance, the case of a brickmaker, 31 years of age, admitted to the Chauffard ward on May 31st. He was suffering from basic pneumonia on the right side, which underwent resolution on the eighth day. There remained, however, a well-marked liquid dullness in the lower third of the lung and thoracic vibration was not perceptible. No egophony or aphonic pectoriloquy, but complete absence of vesicular murmur. The liquid dullness and the absence of breath sounds led us to suspect a metapneumonic pleurisy, but the sign which I have just described settled the question.

During calm, ordinary respiration percussion gave absolute dullness. But on percussing over the same region in forced, sustained inspiration, the dull area at once became resonant. An exploratory puncture gave a negative result and confirmed the diagnosis of persistent congestion of the right base. But this is not all, for it may be made to yield further information.

In a paper published in the *Presse Médicale* (December, 1898) in conjunction with Prosper Mercklen, I called attention to the difficulty that is experienced in some instances in distinguishing albuminuric bronchitis with congestion limited to the apices, from pulmonary tuberculosis. On auscultation this congestion gives rise to weakened breath sounds or, less frequently, to somewhat blowing respiration with fine subcrepitant râles. When the congestion is moderate the tone remains normal and thoracic vibration is not exaggerated. In some cases, however, I noted that more marked congestion provoked the appearance of signs so actually misleading that in one the existence of tuberculosis was asserted by all the candidates for hospital physicianships who had examined the patient. Post-mortem examination showed the apices to be free from tuberculosis and that old-standing nephritis had given rise to general bronchitis with partial diffuse congestion most marked at the apices.

Here again percussion of the thorax in forced sustained inspiration gave a normal tone, whereas in tuberculous infiltration or even in presence of initial simple induration the dulness persists.

This then is another series of cases in which the sign is capable of affording useful information.

These remarks apply also to the congestion limited to the apices met with in cardiac subjects, especially those suffering from mitral lesions, which is so apt to mislead. Everything tends to lead the observer astray. The patient's general state, previous attacks of hæmoptysis, the dyspnœa, the fact that there is a peculiar feeling of resistance to the percussing finger in the supraspinal fossæ, and the appearance on auscultation of a high note along with rough or muffled respiratory murmur.

Much less than this would suffice to make us diagnose tuberculosis, yet the error may be obviated by recourse to the diagnostic sign which I am anxious to see come into general use. Thanks to the very large number of cases in which I have employed it, I am enabled to place it on a sound basis.

To sum up, in ordinary respiration the dulness over the apices seems to be unquestionable and militates in favor of tuberculosis, but directly we percuss in forced sustained inspiration the tone becomes low and no mistake is possible.

The value of the sign is even so not yet exhausted. It has proved of great assistance to me in two cases of Grancher's spleno-pneumonia by enabling me to dispense with exploratory puncture in differentiating this affection from pleurisy with copious effusion. Under the influence of deep sustained inspiration the dull region became resonant on percussion. It has, it is true, been stated that in pleurisy the murmur is muffled and that the tone is lower in spleno-pneumonia, with the presence of not very abundant râles but puncture, indeed, repeated puncture, is the only means at our disposal to arrive at a firm conclusion. And yet, even the cases of Mosny's blocked pleurisy show that the syringe argument itself may be in some instances refuted.—*Le Monde Medical.*

Progress of Medical Science.

MEDICINE.

IN CHARGE OF W. H. B. AIKINS, F. A. CLARKSON,
BREFNEY O'REILLY AND F. C. HARRISON.

Gastric Ulcer

Singer reviews his experience with gastric ulcer, and says that feeding by the rectum is the only safe method in cases complicated with severe hæmorrhage. In two such cases the attempt to commence the Lenhartz diet brought on serious hæmorrhage anew, but restriction to nutrient enemas soon placed the patients on the road to recovery, and then the Lenhartz diet was tolerated without inconvenience and the final outcome was unusually good. He emphasizes the importance of rest and refraining from violent exertion for months and years; patients who have had a gastric ulcer must regard themselves as constantly liable to bring on new disturbances by errors in diet and over-exertion. Two patients had had repeated small hæmorrhages from a duodenal ulcer, but all disturbances ceased after a Lenhartz course, and the health was apparently perfect for months, when lifting a heavy weight or pushing a heavy table brought on the whole train of symptoms again. The patient should keep in touch with his physician for years and return at the slightest symptom suggesting the flaring up of the trouble. Singer calls particular attention to an early sign which he has found practically constant; this is a sensation of discomfort or pain radiating from the epigastrium toward the costal arches and thence along the intercostal nerve routes to the spine. The regularity of the appearance of this pain or sense of discomfort, especially in connection with eating, is characteristic, and almost pathognomonic of gastric ulcer, even when there is scarcely any dyspeptic disturbance.—*Medizinische Klinik, Berlin* and *J. A. M. A.*

A New Sign of Aortic Insufficiency

Everyone knows that visible pulsations observed in different regions of the body, due to arterial hypertension, are supposed to constitute signs of aortic insufficiency. In reality these signs

are not pathognomonic, as they can be found in aneurysm, hypertrophy of the heart, arterio-sclerosis. It is necessary to know these phenomena well and to be able to distinguish between arterial and capillary pulse.

Independently of the capillary pulse observed on the nails, the forehead or the retina, there is a pulse which Mr. Landelfi designated under the name of "*hippus circulatoire*." It consists of a rhythmic movement of contraction and dilatation of the pupil which is observed to be synchronous with the cardiac revolutions.

Another remarkable sign is that of Muller (pulse of the uvula), which consists of a forward and backward motion of the uvula corresponding to the arterial beats and accompanied by changes of color in that organ at each revolution of the heart.

The late Prof. Huchard drew particular attention to the pulsation of the tonsils provoked by the carotids.

Dr. Minervini has added another not less remarkable sign, that of the tongue. He remarked, while looking for the two last signs mentioned, by means of a tongue depressor, that the tongue transmitted to the instrument rhythmic movements from below, upwards and synchronous with the arterial pulsations. Hence there would be a pulse of the tongue due to shock of the lingual artery under the influence of the cardiac beats.

To observe this symptom, the patient should be seated with the head slightly thrown backwards, and the mouth open, the tongue not protruding. The organ can then be seen to rise and fall with the beatings of the heart, and this is especially observed when slight pressure is made with a depressor. It is not however, the tongue only that presents these pulsations, but the whole floor of the mouth, and this lingual pulse is accompanied with a slight turgescence of the tongue during each contraction of the heart, disappearing during dilatation.

M. Minervini believes that this phenomenon, resulting from a regular erection of the lingual artery branch of the external carotid, possesses a pathognomonic value superior to that of all other signs of aortic insufficiency, for hypertrophy of the heart, hypertension, arterio-sclerosis would be unable to produce it like insufficiency of the aorta, and this sign is sufficient to confirm the diagnosis in the absence of many of the other signs. In one case he observed this pulse of the tongue to be much more marked than that of the tonsils or the uvula.

Naturally, the absence of the lingual pulse should not infer the non-existence of aortic disease, otherwise established by its

ordinary signs, but the author declares that he never observed this pulse in any other affection of the heart.—*The Medical Press*.

Sudden Onset of Typhoid Fever by Haemorrhagic Nephritis

Pissavy and Gauchery (*Bulletins de la Soc. Méd. des Hôpitaux*). On Sept. 7 a youth, aged 18, was admitted to hospital with all the symptoms of acute hæmorrhagic nephritis. The urine was of normal quantity, but of blackish red color, and contained a large quantity of albumin, granular and blood casts, and deformed red blood corpuscles. There were intense headache, a dicrotic pulse of 100, a temperature of 104°, bronchitic râles, furred tongue, constipation, enlarged spleen, and œdema of the lower limbs. Eight days previously the symptoms began suddenly after a chill. On Sept. 14 rose spots appeared, diarrhoea replaced the constipation, and Widal's reaction was positive in a dilution of 1 in 50. From the 15th to the 20th the amount of blood in the urine in proportion to the albumin began to diminish. On Oct. 5 the temperature reached normal, the urine was clear, and the quantity of albumin had fallen to $\frac{1}{2}$ gm. per litre. On the 9th the patient was discharged, and the urine contained $\frac{1}{4}$ of a gm. of albumin per litre.

The dicrotic pulse, the want of correspondence between the pulse and temperature, and the splenic enlargement should have suggested the renal form of typhoid fever, but this possibility was not considered, and typhoid fever was diagnosed only on the appearance of the rash.

Acute severe nephritis with hæmaturia is met from time to time in typhoid fever, but it rarely occurs at the onset, before the appearance of the rose spots. In the *Thèses de Paris* of Amat (1878), Didion (1883), and Zègre (1893), five similar cases are recorded:

A man, aged 24, after a chill, had to take to bed with headache and fever. When admitted to hospital a week later he had a temperature of 102.2°, a pulse of 90, a puffy face, and bloody and highly albuminous urine. The appearance 48 hours later of rose spots allowed the diagnosis of acute nephritis to be revised. He recovered.

A man, aged 37, who had been ill 10 days, was taken to a hospital in a state of profound stupor, with a temperature of 102.8°, a pulse of 98, and an enlarged spleen. The urine was scanty and highly albuminous. On the day after admission the urine was suppressed. Jaborandi was given and produced suffi-

cient diureses, but the urine was bloody. Five days later rose spots appeared. After three weeks he was discharged, the urine containing only a trace of albumin.

A woman, aged 20, was suddenly attacked with headache, nausea, giddiness, oliguria, and hæmaturia. The urine contained much albumin. After eight days rose spots appeared and her condition became worse. She died on the fortieth day. The kidneys were found very large and congested.

A woman, aged 21, was seized with headache, backache, vomiting, and diarrhœa. Five days later she was admitted to hospital in a state of high fever. The urine was scanty and contained much albumin. Three days later it became bloody and rose spots appeared. Death occurred on the eighth day of the fever. The kidneys were found large and congested.

A man, aged 21, was admitted on the fifth day of a severe fever. Forty-eight hours after the onset he noticed that the urine was blackish. On admission the urine contained blood, much albumin, and numerous casts. The temperature was 103.5° and the pulse was 101. The liver and spleen were enlarged, and there was gurgling in the right iliac fossa. He died on the thirteenth day.

These cases bring out several points. The sudden onset of the disease by renal symptoms is noteworthy. The prognosis is grave; the six cases show a mortality of 50 per cent. Persistent oliguria is a bad sign. In all the cases the cause of the nephritis seems to have been unrecognized until the appearance of the rose spots, although it should have been suggested by two signs—splenic enlargement and want of correspondence between the temperature and pulse. The former was 104° about, while the latter was only about 90 or 100.—*The Medical Review.*

OBSTETRICS AND GYNAECOLOGY.

IN CHARGE OF ADAM H. WRIGHT, K. C. M'ILWRAITH, FRED. FENTON
AND HELEN MACMURCHY.

Vomiting of Pregnancy

Treatment.—Adrenalin used with success in a case previously uncontrollable. Ten drops of 1 to 1,000 adrenalin solution given morning and night, at first in enema of 150 grams (5 ounces) water with 20 drops of laudanum; after three days, in ice-water by the mouth. Nutrient enemas also given. Vomiting ceased on second day, and on third patient could retain a little food. Recurrence of nausea toward end of pregnancy relieved by 10 drops daily for 5 days.—*Rebaudi*.

Appendicitis in Pregnancy

Treatment.—In severe cases, operate without delay. Mild cases do not demand operation unless there are frequent attacks. When near the end of gestation or in labor, terminate pregnancy and remove appendix immediately after.—*Findley*.

Placenta, Premature Detachment of Normally Situated

Treatment.—Rupture of membranes and rapid delivery not to be done till uterus contracting, patient rallied, and os somewhat dilated. Where no contractions, no dilatation, and patient in collapse, use tampon and binder until patient and uterus have recovered. This enables uterus to withstand pressure of blood within it, and so controls hæmorrhage.—*Goldstine*.

Uncontrollable Vomiting of Pregnancy

The question of uncontrollable vomiting of pregnancy was the subject of a very learned report by Fieux, of Bordeaux, at the Congress of Gynæcology, Obstetrics, and Pædiatry, held at Toulouse in September. The author does not believe in an hysterical origin of uncontrollable vomiting, and very properly, because the majority of pregnant women who are afflicted never presented before their pregnancy any symptoms of hysteria.

Hysterical vomiting arises only after some mental shock, and reaches its maximum at once, or it may persist after a fortuitous attack of vomiting. The idea of vomiting having become fixed in the mind causes the recurrence of the act, but nothing of this sort is met with in the vomiting of pregnancy. The attacks will arise frequently when the woman is unaware of the pregnancy, and consequently there is no element of emotion or moral shock present. Then, again, the progress is entirely different. The vomiting of pregnancy may result in death, an outcome which has never been observed in the hysterical type. And, what is more, many neuropathic women never vomit unless they are pregnant. Consequently, there are other factors besides the neuropathic state which enter into play.

Other types of vomiting which may occur during the progress of a disease of the nervous system or the digestive tract should be eliminated. It is the presence of the living ovum which keeps up the toxæmia, because the removal or death of the fœtus results in an immediate cure.

Fieux and Mauria have demonstrated that there exists in the serum of pregnant women during the first months a specific antibody of the yellow chorial villousities. This antibody, which has been made evident with great distinctness during the second or third month of pregnancy, becomes attenuated during the fourth and disappears during the following months. There is quite a striking parallel between the life of the corpus luteum and this serum reaction, so that it may be asked whether the corpus luteum does not preside over the equilibrium between the toxæmia and the defence of the organism.

Although the nature of the toxæmia is imperfectly understood, the essential point is that we now know what we may do medically. The diet should be light and of easy digestion, but a milk diet should be avoided, as it may increase the gastro-intestinal intoxication by putrid transformation of the casein. Large quantities of water should be given, and if the stomach continues to reject it, dehydration is to be overcome by injections of normal salt solution either subcutaneously or by the rectum. If the vomiting continues, the question arises as to when pregnancy should be interrupted. The loss of flesh gives little information, and one should count more upon the progressive decrease in the urinary excretion. The latter, however, is not a decisive point, and undoubtedly the best guide is the condition of the pulse. As soon as it rises above 100 and remains there, interference is proper. It is true that patients have had a higher pulse than

this, and, nevertheless, have been able to reach the end of their pregnancy, but Fieux is of the opinion that it is dangerous practice to wait.—*N. Y. Med. Jour.*

The Diagnosis of Twin Pregnancy

The diagnosis of a twin pregnancy before labor sets in is a matter of no little importance to the mother, and cannot fail to bring credit to the medical attendant. In spite of this, in a very large percentage of the cases, the condition is overlooked, and any addition to our knowledge therefore which will prevent such mistakes in future is to be welcomed. Dr. C. J. Gauss believes that he has discovered a sign of considerable importance in this connection, and in a paper recently published in the *Zentralblatt für Gynäkologie* lays stress upon the presence of an anterior parietal presentation in the case of the first of twins when it is presenting by the head, as a point of considerable diagnostic value. As a result of the small size of the head and of the leverage action produced by the second child upon the body of the first, due to the want of space *in utero*, he maintains that this presentation is to be met with in so large a proportion of twin pregnancies as to render it of great value. In several cases where the diagnosis had proved impossible by the abdomen, the presence of such a presentation has led him to the successful recognition of a twin pregnancy. An anterior parietal presentation, corresponding as it does to a marked degree of Naegele's obliquity, and associated with abnormally easy recognition of the anterior ear, occurs so infrequently in a normal pelvis as to render its occurrence in such conditions most suggestive of a twin pregnancy. This sign has the drawback that it is not available until labor has commenced, and it is, of course, only present when the first child presents by the head; but such a presentation occurs in some 70 to 80 per cent. of all twin pregnancies. It should therefore, if further observations tend to show that it is as constant an occurrence as Dr. Gauss supposes, prove of considerable value in helping to make a diagnosis in doubtful cases of multiple pregnancy.—*Amer. Med.*

On Rupture of the Uterus. By J. PRESTON MAXWELL, M.B., F.R.C.S.

Rupture of the uterus is one of the serious complications which may at any time meet a practitioner.

As regards the diagnosis, one of the cardinal signs is the stoppage of pains, even though the child has not escaped from the cavity of the uterus.

The uterus cannot be felt as a contracted swelling unless the child has passed either out of the uterus, or, in the case of an incomplete rupture, into the rent still covered by the peritoneum.

Besides this cessation of pains there is prostration of the patient quite out of proportion to any hæmorrhage that can be seen; there is recession of the presenting part, in part or completely, and a varying amount of hæmorrhage, generally bright in color. There may also be a history of obstructed labor, or of treatment such as would be likely to rupture the uterus, though it is a marvel what some of these women are able to stand in the shape of protracted and obstructed labors.

Treatment is of two kinds—prophylactic and curative. The first-named is by far the more important. Barring the rare forms of rupture, such as those taking place in pregnancy, provided that the medical man is called to the patient early enough, he should be able to save his patient from this grave event. An obstructed labor should never be allowed to drag on, but, even at the cost of the child, if necessary, terminated quickly.

A clear distinction must be drawn between the cases where the child is yet in the uterus and those where it has passed into the abdominal cavity.

Where the child has passed completely into the abdominal cavity, it is best to perform abdominal section and extract this way. Where the child has not passed into the abdominal cavity, and there is no serious obstruction, it is best to extract by the vagina.

Having extracted the child, what is the next step? If the extraction has been by the vagina, the writer's advice is as follows: Pass up the hand, carefully cleaned as usual, and determine the nature of the injury. Replace the bowels and omentum, which may have prolapsed into the uterus. This must be done with the greatest gentleness. Pass up a sterilized gauze packing (preferably iodoform or bismuth gauze.—Editor) and adjust it, as far as possible, to the uterine surface of the rent. Give a strong hypodermic injection of ergot and leave the gauze in its place for 24 hours, unless it comes away earlier. Give the patient ergot three times a day, and open the bowels freely on the evening of the second day, preferably with a saline purge.

It will be noticed that the writer advises no attempt to be

made to extract blood-clot and wash the rent. Probably any attempt to douche the inside of the uterus involves a considerable risk. Germs may easily be introduced, and the peritoneum is able to deal with a considerable amount of blood-clot, provided it does not become infected.

If the extraction has been by the abdomen, the course to be pursued depends on the condition found. If the woman is septic, and the rupture is a serious one, probably the best practice would be to remove the uterus and drain the pelvis from the abdominal wound, placing the patient in Fowler's position as soon as the shock has passed off.

If, however, the operation has to be carried out outside a hospital, the writer would content himself with sponging out, not irrigating, the abdomen, and draining the lower part through the abdominal wound, and the adoption of the Fowler position as soon as possible.

In hospital, and if the rupture is in front, it may be sutured, but this must be done accurately if it is to be of real use, and may take a considerable time; and it is to be remembered that one of the chief dangers to the patient is that of shock, and that, if, as is likely, the patient is already exhausted by a long labor, every minute is of importance.—*The China Medical Journal*.

OPHTHALMOLOGY AND OTOLGY

IN CHARGE OF J. T. DUNCAN.

On "Eye" in Sport

In a lecture delivered at St. Thomas' Hospital, R. W. Doyne deals in a masterly manner on "Eye in Sport."

When we speak of "eye" we do not mean the two portions of one's body that are situated on each side of the nose. They have, indeed, a very important share in establishing "eye," but nothing more. "Eye" really exists in the brain. It is, in fact, a very compound thing, a subconscious brain judgment involving many other organs than the actual anatomical eyes. It involves knowledge, experience, very largely the sense of touch, and sometimes the sense of hearing or smell.

Nor is "eye" to be understood to be what is called "the master eye." Many men (especially gunmakers) are obsessed with ideas of the power of the so-called master eye. It is the use of the master eye, they say, that enables you to shoot straight, to hit a golf ball, to smash a tennis ball, to pot the red, and such other things in the same category that call for the use of "eye." It is the main object of this lecture to explain what is the real meaning of "eye," and to remove the false impression that the master eye in the normal individual is of the paramount importance that is usually attributed to it. I wish to point out, among other things, why in golf the phrase "Keep your eye on the ball" should be "Keep your eyes on the ball"; why in shooting your gun should not be twisted into all sorts of fantastic shapes at the will of the gunmaker; why in cricket the more modern position of standing square to and facing the bowler generally produces the best bats, and why in billiards you should use both eyes as most do, and not only the master.

There is no doubt of the fact that there is a master eye. In right-handed people it is usually the right. But if the visual acuity of one eye is defective, then the other eye becomes the "master." In certain pursuits, rifle shooting, for instance, the use of one eye is essential, as we shall see.

Now "eye" is, as before remarked, one of the highest products of the brain, and it involves brain stimulation in various centres and in very delicate degrees. "Eye" is not a definite anatomical part of the body, but a judgment of supreme deli-

cacy, and the more delicate the judgment the greater is the proficiency of the performer in the particular direction to which he has given his attention. One must always remember, therefore, when speaking of "eye," that it is the brain potentiality that one has to consider and reckon upon, and not the visual acuity of the anatomical eyes. High visual acuity is, of course, a detail of some importance, but it is not nearly so important as is popularly supposed. One of our best-known cricketers of the present time, who has never worn glasses for playing games, has only one-tenth of the normal visual acuity, and would have been at once rejected from the army on the score of his sight had he wished to enter.

The author points out that judgment of distance by the average-sighted person is obtained, not by action of the master eye, but by the action of the two eyes in forming the angle that the line of vision of one eye makes with that of the other by means of the muscles that turn the eyes towards the object—in other words, the muscles that cause the eyes to converge on the object looked at. It is only those who are one-eyed or who have only one useful eye that rely upon the state of the focussing muscle. Most people know that, in order to judge distances, we require the action of two eyes. If, however, this requires proof, this can be obtained in many ways, only one of which may be mentioned. If a man has recently lost an eye, he has great difficulty in judging distances, as, for instance, in pouring out a glass of water he will pour it over the edge, etc.

With these facts before us we may proceed to explain why "keep your eyes on the ball" in golf is more correct than "keep your master eye on the ball." In order to avoid striking the ball untruly you have to possess a subconscious brain knowledge of the exact distance the ball is from you and the exact length of your club. With these two facts impressed on your subconscious mind you must practise the muscles that you use in golf to work in accordance with these two facts, and it is accordingly of very great importance that you should not swing your head too far round to avoid cutting off with your nose the view of the ball with one eye—either the master eye or the other, it does not matter which. If it were essentially necessary to keep only your master eye on the ball, you should strike it as truly when the other eye is covered. Let anyone who doubts what I say tie up his non-master eye and see how he strikes the ball. I maintain that in the usual normal-sighted person you can only get a true appreciation of the distance of the golf ball by

using both eyes, and you can only strike it truly when you have a proper appreciation of the length of your club, again by the use of both eyes. These are the two factors necessary for training yourself to be successful in driving. As regards putting, these points come out rather clearly. I understand from those who play that it is correct in putting to keep the eyes fixed on the ball and the whole body stationary, except the arms or wrists, many particular judgments having to be made, and the brain being better able to make them the more simple the process that is involved. Thus in giving the exact force that is needed, as well as the proper direction, the fewer muscles that are employed the easier matter it is for the brain to estimate it, and, though not a golfer myself, I rather fancy all the strokes in golf, some of them no doubt requiring the most delicate judgment, depend mainly on the subconscious "eye," and it has seemed to me that the wriggling movements some players go through in addressing the ball may tend to prevent the "eye" becoming "stale" as regards aim.

Now, passing on to billiards, some writers insist upon the principle of the master eye aligning the cue and ball in the vertical plane of the "master eye." But this is a serious mistake. If we watch any billiard player we will be able to observe nineteen times out of twenty the player does not align with the master eye or the other; he uses the brain "eye," and the line of vision of this mental eye represents a line drawn at right angles from a point midway between the two eyes.

And, as regards cricket and tennis, there are many interesting problems, and they are nearly always matters of brain judgment rather than of visual acuity.

* * * * *

But the subject that interests us most of all is that of shooting. Here the "master eye" business is worked to the uttermost, not with direct intention to deceive, but from incorrect appreciation of the physiology of vision. Just as you estimate the pitch of a ball in cricket, or any of the other instances I have mentioned, so again you should shoot with your brain and not with your eye. I am not, of course, now speaking of rifle shooting. Actually, in shooting, the mind should not be concerned consciously with the position of the gun. The position of the gun should be due to a subconscious effort brought about by training. The same conditions should always be capable of being readily fulfilled, and, to put this concretely, it is, above all things, essential that a gun should be well fitted and come up easily to the shooting position.

In shooting, as in other things, the process is the result of a mental judgment, and the eyes should not be directly concerned with the gun, but with the object that is being fired at. You require both eyes fixed on the object, in order to judge of its distance, and that is an essential datum for forming a judgment as to the rate at which it is traveling past stationary objects, and the angle the eye has to travel through in following it. Now, if it be granted that the sportsman does not look exactly along the barrel of his gun with his master eye, there must be another requirement, and that is estimation of the angle of deviation of the gun from the line of vision, not of the master eye, but of the two eyes; and, as I explained just now, that is from a point halfway between the two eyes.

I must, however, point out that there are some, and a few who are quite good shots, who do not shoot in the way I have described. They add another estimation to the process, namely, the point in front of a bird that they have to shoot at in order that when the latent period required for pulling the trigger combined with the flight of the bird is allowed for, the bird will arrive at that point at the same moment as the shot. They do not swing on the bird, but fire at a fixed spot in front of the bird. Though, as I have said, some few good shots adopt this method, they must rely upon a human factor that is notoriously variable, and that is the latent period, the latent period being, as I have said, the time the muscles take to act after the impulse has been given to pull the trigger. This latent period has been shown by physiologists to be delayed by alcohol, hastened by tea or coffee, again delayed by fatigue, and this mental process being entirely subconscious, the individual considered cannot allow for the variation. As regards rifle shooting, the matter is different; no immediate judgment is needed for distance, that is estimated beforehand, and allowance for movement is not required to any very great extent; nearly the whole question at the moment of pulling the trigger is one of keeping the aim true—a question of extremely minute detail. Aim like this of such extreme exactitude cannot be estimated by brain judgment or experience, it has to be made anew each time the rifle is aimed, and can only be secured with the exactitude that is required by direct alignment, which can only be done by the use of one eye.—Abstract, *British Medical Journal*.

SURGERY

IN CHARGE OF E. E. KING, G. A. BINGHAM AND
C. B. SHUTTLEWORTH.

Scarlet Red

Scarlet red, or, properly, scarlet "R" (toluol-azotoluolazo-B-naphthol), has recently been quite extensively employed to promote epidermization in a number of conditions of ulceration and destruction of the skin. Fischer found, several years ago, that this dye, when injected in oily solution under the skin, has a peculiarly stimulating effect upon epidermic proliferation, which might be pushed until a carcinomatous-like condition was produced. Cernazzi then used it externally to promote epidermization after skin grafting. Since then it has been employed and endorsed by a number of observers. Davis used it in 60 cases as a 2 to 20 per cent. vaseline ointment. When the wound was small the whole surface was covered with the ointment; when it was large it was applied only to the edges. It was painted on with a camel's hair brush, or applied on perforated pieces or strips of gauze. As it is quite irritating, especially in the higher concentrations, it should be used for periods of twenty-four hours alternately with some bland ointment, and it was found well to protect the skin beyond the wound with some indifferent ointment. The lesions treated had lasted from a few days to fifteen years, and included the following diverse conditions: Partial skin grafts, 7 cases; ulcer following operation for infection, 10 cases; ulcer following burn, 11 cases; traumatic ulcer, 10 cases; specific ulcer, 8 cases; varicose ulcer, 7 cases; bed-sore, 2 cases; etc. The stimulant effect of the ointment was extremely marked, so that the higher percentages could only be occasionally and intermittently employed. The 8 per cent. ointment was the one generally employed, and Davis makes the important observation that sterilization does not seem to interfere with its efficacy, although the ointment turns slightly darker in color.

Auerbach has employed scarlet red in 4 per cent. ointment after incision of buboes, in chancroid, inflammatory phimosi, luetic ulcerations, lupus vulgaris, and bed-sores, often with a surprisingly quick result. Similar experiences are recorded by Morawetz in two cases of varicose ulcer of the leg and one of

intertriginous ulceration; he recommends the scarlet red ointment in all cases of extensive and obstinate ulceration. Dauthuille employed it in an enormous ulceration following gangrene of the skin of the thigh and measuring 27 by 10 centimeters: it was completely healed in three months, whereas the attendants estimated that it would take at least eight or nine months to close under the old methods. Some of the investigators have been so pleased with the results attained that they have not hesitated to recommend it in the place of skin grafting in extensive ulcerations and burns.—*Progressive Medicine*.

Surgical Treatment of Cancer of the Breast

The surgical treatment of cancer of the breast should be guided, says Prof. Schwartz, by the fundamental principle, beyond all contestation, that the cancer constitutes at the *début* a purely local affection, and consequently can be cured.

Progressive evolution proves that at the beginning, the lesion is local and limited, but the further one gets from the first stage, the more chance there is for the surgeon's knife to leave behind epithelial cells, which may continue to proliferate.

However, every cancer should not be operated on, only those that are at their first period of evolution. The most favorable case is where the tumor is small and has contracted only adherences with the skin and the pectoralis major muscle, while the axilla is free from ganglions; less favorable are those cases where the neoplasm has contracted adherences with the skin, the muscle, and numerous large ganglions occupy the axilla and reaching to the clavicle. Here an operation is still possible. But abstention should be advised where the tumor has contracted adherences with the ribs and where the supra-clavicular ganglions are infected. According to the expression of Reclus, "the clavicle is the frontier of justifiable operations."

Abstention is also recommended for certain cancers of immediate gravity as acute carcinomatous mastitis, as well as the atrophied scirrhus of old women.

In every case where it is not possible to remove the whole of the infected parts as well as a margin of the healthy tissues, an operation should be refused. The entire mammary gland should be removed, together with the muscle and its aponeurosis, which is generally infiltrated with epithelial cells, for it is frequently through this aponeurosis that the infection is propagated. Hence the necessity of removing nearly the whole of the skin covering

the gland, the aponeurosis, and frequently the muscle as recommended by Helferich. The axillary ganglions should also be carefully extirpated.

Relapse is of two kinds: local and general. The former presents several varieties. The relapse may originate in the cicatrix, under the tegument, in the aponeurosis, and in the axilla (the most frequent), where an infected ganglion has been overlooked.

Relapse from general causes may be represented under the form of cancerous lymphangitis producing infection of the various viscera, the bones (vertebral column), lungs, liver, etc., proving that the evolution of the tumor was too advanced for operation.

Certain predisposing causes favor the production of a return of the affection, such as the age of the patient, the younger the patient the more chance there is of a relapse; heredity, and the histological form of cancer (encephaloid).

Besides the knife, other kinds of treatment have been tried. They might be regarded as good adjuvants to a complete cure when applied immediately after the removal of the tumor. Delbet recommends that a tube of radium be placed under the clavicle and left *in situ* one or two days.—Paris correspondence to *The Medical Press*.

Editorials

THE TEST BREAKFAST AND ITS FAILURES

Those who examine the stomach contents as a routine in all gastro-intestinal cases have often been struck with the great and unexplained discrepancies in the chemical analyses on, say, two successive days. It is no uncommon thing to find the hydrochloric acid absent on the first examination and present in normal quantity the next day. In fact, it is such variations as these which have made gastric analysis so unpopular among the general practitioners. They are unable to interpret their results and, therefore, abandon that particular method of investigation.

The unknown quantity, the x in the equation—which we are all apt to overlook—is the psychic element, known empirically since the dawn of the race, but established on a scientific basis only during the last decade by the experiments of Pawlow and Starling. To tell a patient that to-morrow morning, after a most frugal meal, we are going to “pump” out his stomach, immediately conjures up before the individual some hideous instrument of torture, capable of causing a good deal of pain. It is small wonder that, when the proper time comes, we find a nervous man, who perhaps has slept little from anxious anticipation, and whose gastric contents will most certainly be anacid.

Furthermore, the breakfast which we give is thoroughly continental and ill-adapted to the needs of a man accustomed every morning to porridge, eggs and bacon. The Ewald test-meal is perhaps the best pos-

sible in Europe, where two small "semels" (rolls) and a cup of coffee are considered quite sufficient every morning in the year; but something better must be devised for the average patient on this side of the water.

No doubt the German and Austrian physicians get excellent results from their methods—much more satisfactory than we do when we apply them here; but it must be borne in mind that the average German-speaking hospital patient is much more stoical and phlegmatic than the class one finds in a dispensary in Canada. It is no uncommon sight, in any of the large medical centres, to see five or six patients sitting in the same room where the physician is passing the stomach tube—all apparently interested in the operation and calmly awaiting their turn. If such a proceeding were carried on here one could with certainty prophesy a free acidity of 0.00.

The greatest satisfaction to both patient and doctor will be found from studiously avoiding any reference to the operation of syphoning off the contents. It is enough to tell the patient what food he is to take and simply add, "I intend to see if the food is in the proper condition in your stomach."

F. A. C.

ONTARIO MEDICAL ASSOCIATION

Since the issue of the provisional programme of the thirtieth annual meeting of the Ontario Medical Association we have received further information from the local secretary, Dr. Norman Walker.

As announced in our last issue, the first session

on the morning of Tuesday, May 30th, will be held in the Clifton Hotel, chiefly for the registration of members. In addition to the regular and special sessions, there will be a reception tendered to the members of the Association by the President, Dr. Casgrain, in the Clifton Hotel ball room at 9 p.m. The annual dinner will be held on Wednesday evening in the Clifton Hotel banquet hall.

We are told by the Committee of Arrangements that the Clifton Hotel is one of the foremost hosteleries in Canada, newly decorated, commanding the best view of both the Canadian and American Falls. Three renowned power companies are within a short distance of the hotel. Arrangements have been made to give the members and guests ample opportunity of viewing and examining the greatest water power machinery in the world. The Queen Victoria Park is immediately in front of the hotel and is conceded to be one of the most beautiful in America. Motorists are attracted to Niagara Falls more than any other part of Canada because of the magnificent roads; especially the road between Hamilton and the Falls. Special arrangements have also been made for viewing the Falls from the deck of the "Maid of the Mist" and seeing the Rapids and Whirlpool from the Belt Line cars.

INFANTILE PARALYSIS

We have recently received an interesting laboratory report from Commissioner Samuel S. Dixon, M.D., LL.D., Commissioner of the Department of Health, Commonwealth of Pennsylvania. Doctors

Dixon, Fox and Rucker tell us that in examining the blood from acute cases of poliomyelitis in human beings, and also in monkeys in which the disease was produced experimentally, an organism was found different in morphological characteristics from any heretofore described. These organisms are found free in the serum and also within the body of the red blood cell. They may or may not on further investigation prove to be an etiological factor in the causation of the disease.

Dr. R. W. Lovett, of the Hartford Medical College, recently delivered a "popular" lecture on this subject. He denied the truth of the popular impression that infantile paralysis is a new disease of a mysterious nature, highly dangerous and widespread. It was known in England as early as 1774, but the first accurate description of it appeared in 1846. It is a summer disease, appearing in June, increasing till the end of August, and disappearing in December.

THE MYSTERIES OF SLEEP

Sleep is one of those peculiar mysteries the solution of which up to the present time is unknown to both the scientific specialist and the man on the street.

The *London Pictorial* tells us that many curious facts have been recently discovered about it by the world's savants. For instance, when we sleep the lower half of us weighs more than the upper half. The brain is lighter and the legs are heavier. Experiments have shown that if a man goes to sleep on a bed suspended exactly at the middle point of his weight his head begins to tip slowly up and his feet

to go down. This is due to the fact that when we sleep the blood in the brain goes off to the other parts of the body. The moment the brain wakes to life again it draws the blood back.

It happens when one is fast asleep some part of his brain or several parts of it may at the same time be awake. A man may walk, talk, sing or solve mathematical problems, and yet at the same time be safely in the land of nod.

It seems hard or impossible to decide what part of the brain does sleep. Our sense of time, for instance, is stronger when we sleep than when we are awake. Experiments conducted some years ago on a number of men and women between the ages of 20 and 30 showed that 60 per cent. of them were able to wake up in the morning at any time they had decided upon the night before. As the *Pictorial* expresses it, the resolve seems to wind up something in the subconscious brain, and when the hour has arrived the clock gives in some mysterious way the alarm and the eyelids open.

Another curious fact about sleep is that the further the part of the body is away from the brain the less soundly it sleeps. A touch on the toe will waken one much more readily than a touch on the shoulder.

HEALTH DEMONSTRATIONS

The Ontario Government will have an extensive health exhibit at the next Canadian National Exhibition in Toronto. It will be under the direction of Dr. John W. S. McCullough, Chief Medical Health Officer of the Province. It will include public health

equipment of every kind and purpose used in the prevention of diseases. There are also to be lectures and demonstrations daily, illustrated with lantern slides.

DOCTORS AND THE MORPHINE HABIT

Dr. Wm. F. Boos, of the Massachusetts General Hospital, in a recent address delivered in Boston stated that 10 per cent. of the physicians of the United States are users of morphine through the hypodermic syringe. He said he knew of one hospital where all the physicians, nurses and attendants were users of the drug. He considered morphine more dangerous than opium. He also said there was more smoking than eating of opium, and that a great many young women were smoking opium in the city of Boston.

NEW ADDITION TO HOSPITAL IN BARRIE

The Henry Hatten Strathy Memorial Wing to the Royal Victoria Hospital, Barrie, was formally opened March 3rd. The wing was erected to the memory of the late H. H. Strathy, K.C., the former President of the Hospital Board, by his widow, Mrs. Strathy, and his son, Gerard B. Strathy, of Toronto, at a cost of \$12,500.00.

Notes

The Canadian Association for the Prevention of Tuberculosis will hold its eleventh annual meeting on Thursday and Friday, the 18th and 19th of May, in London, Ontario. As the sanatorium movement in Ontario has received much encouragement from the increased grants of the Provincial Government for such institutions, it is hoped that the splendid new sanatorium at London will prove of special interest to the delegates. Papers and discussions by prominent men on the practical side of the tuberculosis question will be the leading feature of the meetings, and it is hoped that a large number will attend. It is especially hoped to interest the various municipalities which are contemplating active work in this movement by the opportunity these meetings will afford of visiting the Queen Alexandra Sanatorium at London.

Personals

Dr. H. B. Anderson of Toronto sailed for Germany March 1.

Dr. Ivan Senkler, of Vancouver, B.C., visited Toronto March 14th.

Dr. J. A. Butler, late of New York Post-Graduate Medical School and Hospital, has returned to practise at 124 Kendal Avenue, Toronto. He formerly practised in Baden, Ont.

Dr. W. B. Kendell, physician-in-chief of the Muskoka Hospital for Consumptives, returned to Gravenhurst March 30th after an extended tour in Great Britain and on the Continent, visiting most of the leading tuberculosis hospitals in these countries.

Dr. R. B. Orr has been appointed Director of the Provincial Museum in the place of the late Dr. David Boyle, the founder of the Museum, whose death occurred recently. Dr. Orr's salary will be \$1,800, and, in addition, he will be allowed to retain his present practice if he wishes.

Book Reviews

Practical Treatment. Volume I. A Handbook of Practical Treatment. In three volumes. By 79 eminent specialists. Edited by JOHN H. MUSSER, M.D., Professor of Clinical Medicine, University of Pennsylvania, and A. O. J. KELLY, M.D., Assistant Professor of Medicine, University of Pennsylvania. Volume I. Octavo of 909 pages, illustrated. Philadelphia and London: W. B. Saunders Company, 1911. Per volume, cloth, \$6.00 net; half morocco, \$7.50 net. W. B. Saunders Company, Philadelphia and London. Canadian agents: The J. F. Hartz Co., Ltd., Toronto.

Volume I. of this system of treatment deals for the most part with general principles, and as a striking example of the manifold therapeutic measures of which the modern physician must have a knowledge, it is interesting to note that general drug treatment takes up only one small section, while the greater part of the volume discusses dietetics, serum-therapy, hydro-therapy, etc. The intoxications and diseases of the blood are also included.

Of this excellent collection of monographs, each written by an accepted authority, it is hard to particularize, but sections that will perhaps commend themselves especially are those on Dietetics, by Edsall (who is no advocate of Chittenden's theories); Serum Therapy, by Hektoen, of Chicago, and Tait Mackenzie's article on Exercise, Massage and Mechanotherapy. A most instructive chapter is that dealing with the management of slight ailments by Fussell, of Philadelphia. We must confess we have been somewhat disappointed in the section dealing with Diseases of the Blood, in which we think a little more detail would have been indicated.

If the remaining two volumes of this system maintain the high standard of the first, the profession will have been given a work which should serve as a standard for years to come.

Progressive Medicine. A quarterly digest of advances, discoveries and improvements in the medical and surgical sciences, edited by HOBART AMORY HARE, M.D., Professor of Therapeutics and Materia Medica in the Jefferson Medical College, Philadelphia; assisted by LEIGHTON F. APPLEMAN, M.D., Instructor in Therapeutics, Jefferson Medical College, Phila-

delphia. Vol. III., September, 1910. Lea & Febiger, Philadelphia and New York.

Although this volume has been delayed in reaching the editorial desk, it is none the less welcome, for it contains some articles which cannot be surpassed in the English language. Always up-to-date, in both form and material, this number is better than usual. The contents are: Diseases of the Thorax and Its Viscera, by Dr. Ewart; Dermatology and Syphilis, by Gottheil; Obstetrics, by Edw. P. Davis, and Diseases of the Nervous System, by Spiller.

Hints for the General Practitioner in Rhinology and Laryngology. By DR. JOHANN FEIN, Privatdocent at the University of Vienna; translated by J. Bowring Horgan, M.B., B.Ch., late House Surgeon at the Hospital for Diseases of the Throat, Golden Square, London, W. With forty figures in the text and two photographic plates. New York: Rebman Company, 1123 Broadway.

It is always a pleasure to read something which departs from the stereotyped idea of a text-book. Such is the book before us. It is a small volume of some two hundred pages, and is full of suggestions which will be found invaluable to the general practitioner. It recognizes the fact that everyone is not an expert in rhinoscopic and laryngoscopic methods, but points out what conditions of the nose and throat anyone with a very little practice should be able to recognize and appropriately treat. The illustrations are well chosen and instructive. Anyone who reads it will be more than repaid for the time spent.

The Principles of Pathology. Volume I., General Pathology. By J. GEORGE ADAMI, M.A., M.D., LL.D., F.R.S., Professor of Pathology in McGill University, Montreal. New (2nd) edition, thoroughly revised. Octave, 1027 pages, with 329 engravings and 18 plates. Cloth, \$6.00 net. Lea & Febiger, Publishers: Philadelphia and New York. 1910.

It is really remarkable and most highly flattering that a second edition of this work has been necessitated by the unexpected demand for the first. It is not to be wondered at, however, because Pathology is placed before the reader in such an interesting and readable form that one's attention does not in any way lag. The unique manner (from a medical standpoint) in which the author has written this work is one that can easily be followed up by other writers with advantage to them and their readers. It is exceedingly difficult to write a scientific and technical subject in an interesting and readable way, but cer-

tainly Dr. Adami has most admirably succeeded in this work. It is impossible to review the different chapters, the work itself is a grand review, and we can say it should be on the shelves of all medical men who desire to keep posted on disease, its cause and effect.

This volume of the second edition has been enlarged and changed in some small way, but only to bring the subject up to date of issue. We predict as hearty a response to this volume as to the previous one, and again wish to extend our congratulations to the distinguished author on the great success that his work has met. The publishers have been exceedingly careful to produce a work in a most admirable form.

Radium: Its Physics and Therapeutics. By DAWSON TURNER, B.A., M.D., F.R.C.P. Edin., M.R.C.P. Lond., F.R.S. Edin.; Lecturer on Medical Physics, Surgeon's Hall, Edinburgh; Medical Officer in charge of the Electrical Department of the Royal Infirmary, Edinburgh. London: Bailliere, Tindall & Cox. 1911.

The literature of radium-therapy briefly reviewed up to the present time, together with the description of cases treated by the author, make up this monograph on radium. As might be expected, the work of the French school, particularly that of Dr. Louis Wickham, has provided a good deal of the material. As has been the experience of practically all others, Dr. Turner has found that rodent ulcers are the most amenable to the treatment, but he has also obtained excellent results with radium in the treatment of various sarcomata and carcinomata, not to mention its most beneficial effect on angiomata, lupus, lupus erythematosus, chronic eczemas, etc. While the book contains nothing particularly new, still it is of interest as confirming results which have been obtained by others, and thus adding strength to the unquestioned efficacy of radium in a great number of conditions.

Phases of Evolution and Heredity. By DAVID BERRY HART, M.D., F.R.C.P.E.; Lecturer on Midwifery and Diseases of Women, School of the Royal Colleges, Edinburgh. New York: Reiman Company, 1123 Broadway.

This book contains a collection of essays on subjects of great interest to natural scientists, and should prove of great value to all medical men who are interested in the fundamental principles of biology. The opposing schools of Darwin and Weis-

mann are discussed. Mendel's theory of heredity, of which one has seen so much mention in many of the journals recently, is clearly set forth. The subject is evidently a hobby with the author and will prove both interesting and profitable to the reader.

Urine Examination Made Easy. A plan of examination, with the common tests fully described. By THOMAS CARRUTHERS, M.A., M.B., Ch.B. Second edition. London: J. & A. Churchill. 1911.

This little volume consists of notes on urinalysis for the instruction of nurses. It is naturally written in a very simple manner and will hardly appeal to the clinician. For the purpose intended, however, it should prove very useful and it contains many practical suggestions which may be of benefit to the physician as well.

Obituary

ALOYSIUS OLIVER JOSEPH KELLY

Aloysius Oliver Joseph Kelly, pathologist and diagnostician, editor of the *American Journal of the Medical Sciences*, died at his home in Philadelphia, February 23, from complications following an attack of influenza, aged 41. He was a native of Philadelphia, received the baccalaureate degree in Arts in 1888, and three years later the degree of M.A. in La Salle College. He graduated from the Medical Department of the University of Pennsylvania, Philadelphia, in 1891, and for two years did post-graduate work in London, Dublin and Vienna, where he devoted special attention to pathology and internal medicine. He was associate professor of medicine in his alma mater; professor of the theory and practice of medicine in the University of Vermont, College of Medicine; and professor of pathology in the Woman's Medical College of Pennsylvania, Philadelphia. He was a member of the American Medical Association, Association of American Physicians, and American Association of Pathologists and Bacteriologists; a fellow of the College of Physicians of Philadelphia, and of the American Academy of Medicine. He was visiting physician to St. Agnes and University Hospitals, and pathologist to the German Hospital. His literary work included a text-book on the practice of medicine, published in 1910; the joint editorship, with Dr. John H. Musser, of an extensive system of therapeutics; and, as stated above, he was for several years editor of the *American Journal of the Medical Sciences*. Dr. Kelly's death deprives the medical profession of one of its most promising pathologists and internists.—J. A. M. A.

Selections.

Bitter Tonic Mixture for Improving the Appetite

Huchard is credited by *Bulletin général de thérapeutique* for January, 30, 1911, with the formulation of the following bitter tonic:

R	Tincture of cinchona.... Tincture of calumba.... Tincture of gentian.... Tincture of rhubarb.... Tincture of nux vomica..))))) āā 5iss
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M. et Sig.: Fifteen drops in a little water before meals.—
N. Y. Med. Jour.

The Treatment of Ankylostoma Duodenale

In *Janus*, P. Wijn recommends the following compound for use in the treatment of ankylostoma duodenale:

R	Oil of eucalyptus..... Chloroform..... Castor oil.....	℥i; ℥i; 3x.
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M. et Sig.: Take in divided portions in the morning three times a week.

M. et Sig.: Take in divided portions in the morning three times a week.—*N. Y. Med. Jour.*

Accessory Effects of Salvarsan

Gilbert (*Münch. Med. Woch.*) reports a case in which the injection of 0.2 gramme of salvarsan into the gluteal region of a girl, nine years old, for hereditary syphilis, was followed eighty-one hours later by a very severe epileptiform attack, which came near being fatal. He ascribes the symptoms produced to a super-sensibility to arsenic—Sellei reports three cases of recent florid syphilis treated with salvarsan, in which aural troubles developed; the condition was diagnosticated in the first case as hypæsthesia acustica, due to disease of the cochlear nerve; in the second as otitis media chronica, probably exacerbated by salvarsan, in the third as a catarrhal inflammation of the middle ear.—*N. Y. Med. Jour.*

Eczema in Infants

Eczema in infants is always the result of auto-intoxication, but the nature of this intoxication is rather obscure. Defective feeding, especially that by the feeding bottle, may be a cause, as well as that of thyroid insufficiency, while hereditary arthritis has been incriminated.

Clinically, the eczema may be either dry or seborrhœic; the impetiginous form is produced by infection by the staphylococcus from scratching.

The treatment is local and general, but prudence should be observed in attacking the cutaneous lesions. Only one region after another should be treated, and all remedies should be suspended where such accidents as bronchitis or enteritis are imminent, as the skin is an emunctory to be respected.

After all, the elements of desiccation are removed by applications of sterilized oil or starch poultices, a modifying ointment is applied, and the best pomade for the irritation or pruritus is the ordinary zinc ointment.

In seborrhœic eczema a mild sulphur ointment may be prescribed:

Flour of sulphur, 15 gr.

Vaseline, 4 dr.

Lanoline, 4 dr.

Where the skin is moist, a drying powder will be applied:

Fuller's earth, 1 oz.

S. N. of bismuth, 3 dr.

Oxide of zinc, 1 dr.

To prevent the child from scratching itself, its hands should be wrapped up at night, and the arms placed in cardboard cylinders.

As general treatment, constant attention should be paid to the method of feeding and the kind of milk used. Castor oil should be given from time to time to the very young, or calomel to the older children, especially where the liver seems to act sluggishly.

Citrate of soda or bicarbonate of soda, continued for a long time, is recommended for arthritic subjects, and lactic acid for those suffering from attacks of enteritis. Injections of sea water, as recommended by Quinton, may be useful in the torpid forms.

As to the treatment by thyroid substance, it may be employed in the seborrhœic form of eczema at the dose of one to three grains daily.

ERYTHEMA NODOSUM.

As in the case of eczema, this curious affection is the result of general intoxication by poisons which should be eliminated.

Salicylate of soda, in doses of 15 grains four times daily, can be of great benefit, while the patient is put on milk diet.

As a purgative, calomel or sulphate of soda should be given:

Calomel, 2 gr.

Sugar, 10 gr.

For one powder—one every four hours.

Injections of metallic ferments (collargol or electargol) are useful, while the local treatment should be limited to powdering, with:

Oxide of zinc, 4 dr.

Starch, 2 oz.

Camphor, 30 gr.

TUBERCULOUS GANGLIONS.

The treatment of tuberculous ganglions of the neck is essentially that of interstitial injections of a mixture of camphor and naphthol. The preparation has been regarded by many as very toxic, and even causing fatal accidents. But Dr. Guibert, who has minutely studied the question, considers such accidents as due to the impurity of the drug. He always employs naphthol A, to the exclusion of naphthol B, as being less toxic and more antiseptic. Further, to the mixture he adds glycerine, which materially contributes to the diminishing of the toxicity of the naphthol. He formulates as follows:

Naphthol-camphor, 1.

Glycerine, 7.

Of this solution, from 5 to 30 drops are injected into the indurated ganglion and repeated every three or four days, until softening takes place, when the aspirator may be used to draw off the pus.—*The Medical Press*.

Miscellaneous.

Grippal Cough—Laryngitis—Bronchitis

In these affections antikamnia is indicated for two reasons: First, because of its absolute power over pain, at once removing this element of distress and placing the whole system in the best possible condition for a speedy recovery. And, second, because of its power to control inflammatory processes, lowering the fever by its peculiar action on the nervous system. Codeine is strongly indicated because of its power as a nervous quietant, often quickly and completely controlling the cough. In nervous coughs, irritation of the throat, laryngitis, bronchitis and phthisis, where the cough is altogether out of proportion to the amount of expectoration, Antikamnia and Codeine tablets will give prompt satisfaction. In fact, in cases of nervous coughs, irritable throat, so commonly attendant upon influenza and la grippe, as well as in sub-acute laryngitis, and slight bronchitis, this tablet alone will often so control the cough that the disease rapidly subsides. This is not strange when we remember that nothing could keep up this irritation more than constant coughing. In the more severe cases of bronchitis and in phthisis, the patient is not only made more comfortable, but the disease itself is brought more directly under control by checking the excessive coughing, relieving the pain, and bringing the temperature down to the normal standard.

"Sulking" Animals

In a communication under this heading to the *Times*, Dr. Wyndham Cottle and Dr. Cunyngham Browne offer a suggestive contribution to our knowledge of the psychology of "sulking." They show that this condition among lower animals is by no means due, as the vulgar commonly believe, to some moral perversity calling for severe correction or cruel treatment. They demonstrate from their own observations and the experiments of other physiologists that sulkiness is in most cases a condition of physical collapse often equivalent to fainting, and due, as a rule, more to fear and shock than to fatigue. The first two facts are often alone enough in some animals to effect remarkable alterations of respiration and circulation, not rarely passing from a state of immobility into death. The analogy between the

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SOME TYPES OF SERUM REACTIONS*

WM. GOLDIE, M.B., Associate in Medicine, Univ. of Tor.

In bringing forward the subject of serum reactions for discussion by the Pathological Section there is no need for excuse, for it is a subject so closely related to the study of anaphylaxis, upon which is concentrated the energies of many workers in pathology; but in presenting the subject in such a limited scope and in the short and very incomplete way that I will I have to beg your forbearance.

If the subject as I shall approach it seems to be one which should be presented to the Medical Section, I can only plead the excuse that, as the results of the experimental work done by the pathologist in the study of anaphylaxis have had great influence in upsetting the judgment or sense of proportion of the practitioner; it is only fair to draw the attention of the pathologist to the facts accumulated and the results obtained in the use of sera when used as curative or prophylactic agents.

Without any attempt in outlining any of the working hypotheses which seek to explain the phenomena termed anaphylaxis, I only wish you to recall the typical reaction which occurs, when an animal sensitized by one or more doses of protein, receives after a longer interval a minute dose of the same protein. Within a few seconds or minutes death ensues in the most sudden and appalling manner.

So constant is this result and so impressive that it only requires the few cases of sudden death in man following immediately upon the use of antidiphtheretic serum to shake the faith founded on custom and slight experience and to cause a panic and the discarding of one of the most reliable of our curative agents.

That such direful results do not follow in almost like experiments in children the records of the Hospital for Sick Children definitely show.

*Read before the Pathological Section of the Academy of Medicine.

Every child admitted to the Hospital receives 500 units or about 1cc. of antidiphtheretic serum every *two* weeks, and for two years 1,000 units of about 2cc. of serum was used every *three* weeks.

Nearly 9,000 children have been admitted, many of them being readmitted after a period of a few days to just short of three years, while 19 resident in the hospital had a free interval of two months and 103 an interval of seven weeks, and all of this without a single death or any serious reaction where the interval was of considerable length.

Reactions do occur following the use of sera, and it is noticed that these phenomena are rather related to the particular individual than to the interval or the kind of serum used. Five different sera have been used, including one form of the precipitated and redissolving B globulin, and with the exception that one lot cloudy but sterile give rise to more abscesses, no difference could be made out as far as incidence of reactions. One child out of eighteen shows some form of reaction, this ratio varying from 1 in 16 to 1 in 19.7 of the children present at any one time.

The majority of those showing a reaction will develop local or general symptoms after the first dosage; a few will react as late as the third dosage, and a rare case as late as the seventh dose. But once a child shows a local or general reaction it is almost certain to react to every subsequent dosage, no matter what size that dosage may be. There are, however, a few rare cases that react in the first dosages but cease to react later on.

Among the children reacting seven showed such alarming symptoms that the use of serum was discontinued; of these two had severe reactions with the first dosage, and the five others developed the severe reaction after the second and the third dosages. None of these seven children had had any serum administered before entering the hospital, nor has there occurred a reaction among the children seeking re-admission after varying intervals up to nearly three years, unless that child had a reaction during the former stay in the hospital.

This, however, only applies to the children; for the most severe and prolonged reactions have occurred among the nurses and the house staff, and while the number to whom the serum has been administered is too small to draw any conclusions from, yet it is my opinion the occurrence of reaction is more frequent and more severe among these particular adults, especially if there has been a long interval.

The different phenomena of a reaction are varied in charac-

ter, but are mainly of the angio-neurotic type, dependent upon some derangement of vaso-motor control. In a few cases there may be a rise of two or three degrees in the temperature during the subsequent twenty-four hours, frequently unaccompanied by any other evidence of a reaction. Most of the cases giving a severe reaction have at the same time some increase of temperature.

A local reaction occurring at the site of inoculation is frequent, usually appearing soon after the injection, but sometimes delayed for as long as a week. There is swelling, induration, pain, sometimes a wide erythema, but always over the prominence of the swelling irregular and patchy wheals of the urticarial type. Such a reaction is a certain sign that a general rash will follow, if not with that dosage then with some subsequent one.

A general rash is the most frequent and often the only sign of reaction. No matter how marked such a rash be, I should class it as a mild reaction if unaccompanied by evidence of mucous membrane involvement or such other evidences as I shall mention in recording some severe reactions.

The character of the rash is urticarial, usually definitely so, occasionally on the trunk it may appear erythematous, scarlatiniform or rubelliform, but its urticarial nature will show sometime in the course or in such situations as the face and the extremities.

The development of the rash may take place within a few minutes or be delayed as long as ten or twelve days, though rarely longer than five days. As a rule it appears on the trunk and lower extremities first. But I wish to call your attention to a peculiar phenomena that is frequently noticed, the urticaria begins over the site of infection and from this spreads over the whole body, even when the reaction has been delayed for several days, or when there has been a primary local rash, followed in several days by a general rash.

The duration of the rash is ordinarily a little over twenty-four hours, rarely longer than forty-eight hours. There are cases where there is a persisting local reaction for two or three days before the general rash appears, and also cases in which the rash may fade almost away, only to reappear for as many as five, six, seven or eight successive days.

The symptom of itching is not as evident among the children as among the adults, but in both there is a restlessness unaccounted for by the itching.

Joint pain is rather infrequent in children, being more fre-

quent in adults, and is rarely complained of unless there is a well-marked general urticaria, reaching its height as the rash disappears, and persisting for as long as two or three weeks. No objective evidence could be found in any of the cases. So widespread may this be that every joint in the body may be involved, and so severe that the patient lies fixed and immovable, with eyes alone moving and the tears streaming over the face, requiring free use of morphine to lessen the agony.

The slowing of the pulse recorded by some observers I have never noticed.

Abscess formation at the site of inoculation one can hardly class as a serum reaction. These are usually acute, and smears and cultures show the presence of the staphylococcus pyogenes albus or aureus. The children in whom these occur are almost invariably suffering from chronic suppuration, and show in their appearance and voice that there is no feeling of well-being. Other children showing interest and a desire for play in spite of discharged sinuses and wounds rarely if ever develop abscess.

There is one type of abscess, however, that seems to be more definitely related to the serum. A child without any suppurative focus is noticed to have a boggy swelling near the site of the injection, this without pain, induration, redness or tension. The subcutaneous tissue seems to have dissolved, and the fluid sags to the dependent part as position is changed. None of such abscesses, however, but show a staphylococcus present in the pus.

I wish now to draw your attention to the severe type of reaction, as found in the seven children already mentioned. Within a few minutes of the injection the child becomes restless, complains of great pain, looks pale and exhausted; there is a great local reaction, with swelling and induration. The restlessness increases, the respirations hurried, the pulse fast and irregular, cyanosis develops early. The pulse becomes weaker and more rapid until it can no longer be felt at the wrist, and the face is livid or greyish and looks to be swollen, respirations become irregular and shallow, and death seems imminent.

If this stage is slow, or when the pulse returns in the radial, the swelling of the face is seen to be urticarial, giant urticaria appear over the body, is evident in the mouth and throat, and the development of a condition resembling an asthma, with post-sternal distress, indicates the same condition of the bronchial mucous membranes, as cramps and tenesmus indicate involvement of the intestinal musculature and mucous membranes.

As you imagine the duration of such a reaction cannot last long. Within ten minutes the first stage has reached its height,

and gradually subsides, while the discomfort of the urticaria, unless relieved by morphine, lasts for 24 to 48 hours.

That there are in such cases two distinct processes overlapping, I feel certain, for the urticaria may not come on with the violent, shock-like symptoms, but be delayed for days.

To illustrate this, I shall cite the case of a nurse who had, for prophylaxis, 500 units, or 1 c.c., of serum injected sixteen months before a curative dose of 20,000 units, or 18 c.c.'s of serum was administered in the first day of diphtheria. Within a few minutes there appeared a well-marked local reaction; two and a half hours later she awoke in distress, unable to see distinctly, spots and flashes before her eyes, a sense of sinking and faintness, with marked palpitation, was unable to sit up, and in great fear. She was able to attract attention, and was found ghastly pale, with an exceedingly rapid and weak pulse and deep sighing and irregular respiration. Morphine and atropine was administered, but she did not regain comfort for eight hours. Four and a half days after the injection she developed a most severe urticaria, which began at the site of injection, and involved not only the skin, but the mucous membrane.

Another nurse, who received at the same time a prophylactic dose, developed pharyngeal diphtheria four months later, and the first day received 15,000 units, or 15 c.c.'s, of serum. Here the same group of symptoms developed in the same order, but much more rapidly, so that some overlapping occurred, though the shock-like symptoms were well over before the severe general urticaria came on.

How we are to explain these different reactions which follow one another, and why they should develop, not only in those who have had serum at some previous time, but in children who are known never to have had an injection previous to the one producing the reaction, I cannot suggest, nor do I think an explanation will be forthcoming until the pathologist supplies the key.

This short record, however, justifies me in urging that the practitioner should not be too much upset by the experimental work, and if he feels doubtful, to urge him to use the means that the pathologist has supplied of immunizing the patient against even such reactions, as has been indicated in this paper.

NOTES ON SOME CASES AT ROOSEVELT HOSPITAL*

BY WILLIAM OLDRIGHT, M.A., M.D.

Last month I spent the greater part of a day in Roosevelt Hospital. In the morning I arrived just as Dr. Peck was operating on a case of empyema. The operation was a modification and enlargement of a method introduced many years ago by our late lamented friend and sometime colleague, Dr. James H. Richardson. Hearing of this the late Dr. W. T. Aikins adopted it in a case which he had about the same time. The third case was one occurring in my own practice shortly afterwards; and I have continued to employ it from time to time ever since, modifying it as circumstances might require. Before referring further to Dr. Peck's operation, I will describe the evolution of Dr. Richardson's. Some of the older Fellows may remember my having illustrated this at a meeting of the Ontario Medical Association, and others may have seen some of my cases; if so, I must crave their indulgence whilst I describe it to others. I think Dr. Richardson had withdrawn fluid once or twice from the thoracic cavity of his patient, and he conceived the idea of a more permanent drainage, which he effected by paracentesis through an intercostal space by means of a trocar and cannula, the latter large enough to allow of the introduction through it of $\frac{3}{4}$ -inch rubber tubing. It was of great importance that the walls of our tubing should be of good stuff, firm (whilst thin), perfectly circular, and not too easily collapsible when between the tissues of the chest wall. As soon as the pus began to flow through the tubing, which was about 15 inches in length, the distal end was submerged in a glass of water; later one per cent. carbolic solution was used for reasons which will appear, and the cannula slipped down over the tubing and removed. The flow became impeded by small flakes of lymph partially blocking the tube: one such flake completely cutting off the flow. Dr. Richardson struck upon the expedient of syphoning a medicated solution back into the chest cavity to displace the obstructing particle, and then followed the purpose of washing out the cavity with the one per cent. carbolic solution. This was continued until the flow came out pretty clear, and the nurse (in the earlier days often the mother or some other member of the family) was taught to do this washing twice a day at first. At each washing

*Read before the Surgical Section of the Academy of Medicine, Toronto, 18th April, 1911.

as much fluid as possible was run out: coughing was a warning to stop soon, if all had not run out that would come. At the cessation of such washing the tube was pinched before removal of the end from below the surface of the water; the end was then securely double-tied, the tube secured by plaster to the wall of the chest at the site of its passage through the latter, and then coiled up and secured in its position by more plaster strips.

The spot chosen for puncture was about on a level with the nipple, at the point of intersection of a line drawn from it with the midaxillary line, or a little posterior to the latter; the tubing extended into the chest about two inches.

After a little troublesome experience in losing our measurement we took the precaution to mark the tube with silver nitrate, say at 5 inches from the end before inserting it.

I spoke of modification of the process: the sinus in the chest wall would become too large, and we had to replace with larger tubing, cut bevelled on the end for introduction. Sometimes we placed flanges around the tube to avoid excoriation by the plaster, or to close the opening better. As a rule, after a period varying from a few weeks to some months the discharge of pus ceased, a slight discharge of serum taking its place: the tube being removed this would soon stop.

Dr. Peck makes a larger opening into the thoracic cavity at the onset by excising a portion of rib and inserting a rubber spool tube, through which he passes a piece of $\frac{1}{2}$ -inch tubing, leaving both in the wall of the chest. He allows the pus to drain away by gravitation, the distal end of the tubing being led below the surface of a solution in a bottle or other vessel.

What then are the advantages claimed by these methods of treatment? In both the pneumatic action of the chest is better maintained than by other methods. In our cases during the dressings the downward discharge through the tubing excited a syphonic action, whilst the wall of the thorax is maintained as a cavity closed except to this syphonic action. In the intervals it is a closed wall. Under both conditions the expansion of the chest cavity invites atmospheric pressure to keep up its action in simultaneous expansion of the lung. Another advantage in our cases is that it allows the patient after a short time to move about and go out soon with a clean and easily carried dressing. I still maintain that the advantages secured by these methods are greater than those of the open drainage more commonly employed for some years. By means of them also can be obtained any beneficial effect of local medication, in favor of which some

practitioners are taking what I cannot but characterize as the retrograde step towards the closed method of early years.

The great advantage of all methods of permanent drainage over that of periodic tappings and aspirations in relieving the collapsed lung from compressing fluid seems to me too self-evident to require argument.

I understand that Dr. Peck has obtained results which are very satisfactory. His method avoids the tedious syphonings back and forth of the fluid which we employ, a matter of some importance in the busy wards of a hospital, but whether it will compensate for the advantage of our patients of the more convenient method of wearing the tubing whilst moving about remains to be seen.

One might excise as Dr. Peck does and put the larger tubing up in a coil on the chest: in fact, in some cases, the opening having become very much enlarged, we used $\frac{3}{4}$ -inch tubing and coiled it up in the same way as before. The introduction of a tube through a cannula is, of course, a more simple procedure than an excision of a piece of rib. A preliminary incision through the skin facilitates the introduction of a good-sized trocar and cannula.

In some cases a method similar to that of Dr. Peck has been to allow the patient to go about with his tube dipping into a bottle in his pocket—a little awkward I should think.

In the first case in which I employed Dr. Richardson's method the patient was changed in a short time from a little boy panting and nursing his head on a table to a little boy enjoying himself by moving about in the garden or field. I showed him and another some years later—strong, rugged young men—at a meeting of the Ontario Medical Association, members of which could find no difference except the scar on examining the two sides of the chest. I had a number of such cases as against two which failed; both of tuberculosis—failure following improvement. In one case I resected three ribs on account of the cavity not closing up from within.

I saw some other cases of minor importance with Dr. Peck at the Roosevelt.

In the afternoon Dr. Taylor and Dr. Brewer operated on some gynæcological and abdominal cases, and I divided my time between two rooms. In one of Dr. Taylor's cases a ventral fixation was made by bringing the round ligament up through the peritoneum, muscles and fascia and stitching it to the external surface of the latter. Dr. Brewer I saw doing some work in gastro-enterostomy.

I have to thank all these gentlemen for their courtesy, as well as Dr. Webb, one of the house surgeons of the present year.

It was the pleasure and satisfaction of finding sustained and carried out the principle of conserving the mechanical action of the thoracic cavity, a principle laid hold of by one of my preceptors in surgery and acted upon here for so many years, it was this that suggested to me the thought of saying something to you of the few pleasant hours spent with him and his colleagues whom I have mentioned. And I trust to your brotherly feeling for them and for me for forgiving me if I have not brought from them as much and as many things as the title of this paper may have led you to expect, and as I might have brought you had my stay in New York been as long as I would have liked it to be.

NOTES ON A CASE OF EPITHELIOMA OF THE LARYNX

BY W. T. WALLACE, M.B., BERLIN.

The following case is reported, not on account of its rarity, but on account of the fortunate result. The outcome was considered, at the time of operating, somewhat dubious, on account of the patient's history.

The patient, aged 46, referred July 20, 1906, by Dr. Minchin, of Berlin, complained of hoarseness. Pain localized or referred, cough, dyspnoea and dysphagia absent.

The patient's father died at the age of 80, mother at 50. Cause of death indefinite. An elder brother died of malignant disease of the larynx, which had begun, according to Dr. Minchin, on the vocal cord, in very much the same way as in the present instance.

The patient is a stout, heavily-built man, with a short, thick neck. Had always been healthy. A very heavy smoker, but did not inhale. No history of any previous throat trouble. The hoarseness began about one month previously, becoming rather worse lately. The hoarseness was continual, very little variation, no expectoration.

On examination with mirror, a fusiform thickening on anterior part of left vocal cord, shading off gradually into normal cord substance. The remainder of the cord somewhat injected. A few enlarged blood vessels were to be seen coursing over the tumor.

Movements somewhat sluggish, a little slow on the start, but the cords approximated as close as the tumor permitted. Larynx otherwise normal. The delayed movement, taken in connection with the small size of the tumor, was suggestive to my mind of infiltration.

The diagnosis of epithelioma seemed evident, not only from the clinical picture, but also by elimination. No evidence, subjective or objective, of tuberculosis, aside from the fact that the tumor did not resemble a gumma, specific history was negative.

Patient consented to having a thyrotomy performed, but before being operated upon, sought other advice, and the diagnosis of carcinoma was verified by microscopic findings. (Section of tumor removed by endo-laryngeal route.)

Operation begun with patient under chloroform in Trendel-

enburg position. A somewhat longer incision than usual was required on account of the thickness of subcutaneous fat. The thyroid cartilage was split open, using a pair of stout turbinate scissors. The hæmorrhage was controlled by holding apart the sides of thyroid cartilage by retractors. Chloroform discontinued, and cocaine and adrenalin applied to the area to be excised, care being taken not to abolish tracheal reflex by applying the cocaine to the area to be excised only. The cord, together with about one quarter of an inch above and below, and the piece of cartilage subjacent, was excised.

Tracheotomy tube was not used; the wound was stitched up, the thyroid cartilage being held together by means of a stitch through the periosteum; a small gauze drain left at the lower end. As there was but little difficulty in swallowing, liquid nourishment was given as after any other operation.

Wound healed promptly, and a fibrous band formed in place of the excised cord, so that the patient has sufficient vocal power to enable him to take an active part in municipal affairs.

Microscopic examination of the growth proved it to be a squamous-celled epithelioma.

Selected Articles.

THE TREATMENT OF DUODENAL ULCER

BY ROBERT J. M. BUCHANAN, M.D., F.R.C.P.

Honorary Physician, Royal Infirmary, Liverpool; Lecturer on Clinical Medicine
Liverpool United Hospitals Clinical Schools; Professor of Forensic Medicine,
Liverpool University.

The question as to whether dietetic and therapeutic measures should be given a trial in preference to immediate operation is a matter for serious consideration. It has been said that duodenal ulcer never heals, that it is a progressive and destructive process which sooner or later leads to hæmorrhage or perforation. This is an assertion which I trust is wrong, and I think lacking in foundation. Healed ulcers have been found post-mortem, and there is no doubt that a certain proportion of cases which have shown classic symptoms have completely recovered without surgical interference. I know of several. The danger lies, however, in the subtlety of the condition, in that all symptoms may disappear only to recur at a future date; and this tendency to recurrence is one of the characteristic features of the disease. One of my cases was absolutely free from symptoms for over twelve months when recurrence took place, and proved fatal shortly after operation; in another, a free interval of a year was followed by unexpected perforation. One has heard of so-called cures having taken place as many as sixteen times in the same case. This peculiarity of recurrence may be accounted for by multiple ulceration or the outbreak of a fresh ulcer independent of the primary one. Some observers support strongly the idea of multiple ulcers, and it has been noted that with the lesion of the duodenum there have been present ulceration of the mouth and œsophagus, pointing to an ulcerative dyscrasia; and the upholders of this view argue, and I think with reason, that any operative interference does nothing to combat this dyscrasia or the true cause of the lesion, and may even supply a damaged mucosa for fresh ulceration in one already predisposed to it. The more we learn of the true pathology of the condition the more it will appear that methods of treatment will require full reconsideration.

I shall approach the treatment of duodenal ulcer under the

headings of Rest; Diet; Therapeutic and Symptomatic; Operative; Post-Operative.

Rest.—When duodenal ulcer has been definitely diagnosed, or the sum of its probabilities is sufficient to be regarded as a clinical certainty, treatment should be commenced at once and pursued with strict attention to detail. To this end it is essential that for several weeks absolute rest in bed should be enjoined. Rest is a great factor in the relief of pain, and prevents dragging.

Dietetic Treatment.—Without going into great detail, I would point out the advisability of a strict adherence to an almost exclusively proteid diet, especially animal proteid, to the exclusion of all vegetables, starch, and fats. Four to six ounces or more of pounded or finely minced beef very slightly cooked may be given three or four times daily for two or three weeks. Later on, lightly grilled chop or steak, a cut from the joint, or stewed tripe. With this a small quantity of toasted bread, and a wineglassful of water at meals. Eggs may be given raw or lightly cooked. Tea, coffee, cocoa, milk, wine, or other alcoholic beverages should be avoided; fish, fruits, and preserves of any kind are undesirable; little salt and no condiments should be used. Half a pint of warm water, or equal parts of it and Vichy water, should be sipped at 7 and 11 a.m., 4 and 8 p.m.; but none should be taken within two hours prior to or after a meal. No soups should be allowed, and such preparations as salt meat juices should be avoided.

By such a proteid diet the secretion of gastric juice becomes limited, and there is undiluted action. Acidity and heartburn disappear, and little or no material is present which is not acted upon during peptic digestion, or which is liable to stagnation and fermentation, with the formation of organic acids and the evolution of gas to cause distension. The pepsin and HCl are kept sufficiently occupied to prevent local digestion of the damaged mucous membrane, and in view of this statement I may point out that the first part of the duodenum, the common seat of ulcer, is anatomically, physiologically, and pathologically similar to the stomach, and clinically may be said to form a part of it.

It is surprising how even with this diet alone the symptoms of pain and acidity will rapidly lessen and disappear. It can quickly be increased in quantity, and the nutrition of the patient enhanced, and healing will be assisted. It ought to be persevered in for at least six months, and, although monotonous at first, becomes agreeable to the patient, who learns its value, loses epicurean tastes, and is surprised to think by how small a variety

his palate may be appeased. Variations in the proteid and culinary measures are admissible from time to time. Minced beef or veal may be given cold, and provides a pleasant dish for breakfast or lunch, prepared in the following way:

One pound of lean beef and a cow-heel are gently simmered in two quarts of water with two cloves for four or five hours. The beef is then removed, and put several times through a mincing machine, returned to the stock, and boiled up again for half an hour with a drachm or two of mace. The cow-heel is then removed, and the stock poured into a cold, wetted mould to set.

Veal may be used instead of beef, and knuckle of veal substituted for the cow-heel; half the quantity of water should be used. If necessary, a little gelatine may be added to ensure firmer setting. If more be made at a time than can be consumed in a day, it is advisable to reboil the surplus for twenty minutes next day to keep it sweet. Not more than two days' supply should be prepared at once, especially in warm weather, as it will not keep "fresh" over forty-eight hours.

Peptonized and pancreatized foods I consider undesirable and inadvisable.

Therapeutic and Symptomatic.—It is essential that the bowel should be kept fairly active, even to the point of slight purgation; and a pill which will act upon the small intestine is desirable. The following is eminently satisfactory:

R	Aloin	
	Ext. casc. sagr.	} āā gr. jss.
	Ferri sulph. exsic.	
	Ext. nucis vom., gr. ½.	
M.	ft. pil. j.	Nocte sumendum.

Other similar aperients may be substituted, and where an outlook is kept for hæmorrhage the iron may be eliminated. Saline aperients act more particularly on the colon, but may be used in conjunction with the pill if necessary.

To relieve acidity, and render the contents of the stomach alkaline, I have found the following formula more beneficial than any other:

R	Bismuthi carb.	} āā gr. x.
	Sodii bicarb.	
	Sodii citratis	
	Calc. carb.	
	Aq. ad oz. 1½.	

In some cases I omit the bismuth and substitute sodium sulphocarbolate or hyposulphite, when there is any special tendency

to fermentation. The use of gum-arabic or tragacanth to suspend the bismuth should be at a minimum, and I prefer to leave them out.

Magnesium carbonate has been recommended on the grounds that it is slowly dissociated, and its alkalizing power is more prolonged. I have ceased to use it, as it soon gives rise to colicky pains, and causes considerable irritation of the lower colon and rectum, with tenesmus when taken regularly.

The alkaline mixture should be administered one and a half hours after a meal, when HCl is at a maximum and requires neutralization. The use of large doses of sodium carbonate at this time is not so satisfactory, as it is rapidly dissociated, with sudden evolution of gas. The addition of the other carbonates seems to prevent this.

An excellent preparation to counteract acidity and neutralize the acid is hydrated oxide of magnesia, in doses of half to two drachms of the hydrate suspended in distilled water. It is of particular value in that it acts without the evolution of gas, such as occurs when carbonates are used, and which gives rise to painful distension. It does not cause intestinal irritation.

In place of pure warm water, a natural alkaline water, *e.g.*, Vichy, may be substituted through the day. I have found the Grande Grille or Celestin most satisfactory, but they should be obtained fresh, as this water has the failing of soon becoming "corked," unless obtained in the newly "capped" bottles.

For the relief of pain it is undesirable to resort to any preparation of opium, as it tends to produce constipation, and gives a false impression of the natural progress of events. There is nothing so comforting as a hot bath for the relief of pain; its effect is rapid and lasting, at the same time removing the sense of chill and shock that so often accompanies the attacks. Cold bathing should be avoided.

Referred pains are relieved by counter irritation: a home-made mustard leaf, in my opinion, is much the best. Counter irritation is most valuable where adhesive inflammation is suspected. I should like to point out here that, when moving about, *strict precaution should be taken against exposure to cold: such patients are very sensitive to cold, it always aggravates the condition, and any marked exposure may determine a recurrence of the condition when to all intents it has been pronounced cured. Warm clothing is an essential, and the feet and hands should be well protected.* Anxiety and any exhausting occupation should be avoided and guarded against after convalescence is established.

I have also mentioned the value of physical rest for pain: on assuming the recumbent posture sleep often follows, and on awakening pain has all gone, especially in cases with adhesions.

Serum Treatment.—This treatment is based on the knowledge that cells produce enzymes which digest themselves if unrestrained; these enzymes are specific to the cells which produce them, except in the case of leucocytes, which are able to digest almost any kind of cell.

These cellular enzymes resemble toxins, and act as such. They are of the nature of trypsin. The process of self-digestion is termed autolysis, and the solution of the cell proceeds rapidly in an acid medium. The generic term for them is "autolysin." To prevent autolysis the cell also produces a restraining body, which may be termed an antilysin, of the nature of antitrypsin. The equilibrium of cell autolysin and antilysin is maintained in health, so that "in the evolution of cell maintenance it is only this power of restraint that enables a cell, not only to remain a cell of its own kind, but to remain a cell at all" (Hort). If this equilibrium be disturbed, and especially if the antilysin restraint be lowered, autolysis will take place and the cell break down.

This equilibrium may be disturbed by influences from within or without the cell. Blood serum contains antilyns effective against all tissue enzymes. It paralyses their action. The antilytic power of lymph from a recent healthy wound is high; from an old unhealing surface, low. By the local action of normal serum, or of serum the antilytic power of which has been increased by the addition of more antilyns (the antilytic bodies reside in the albuminous portion of the serum, and are to be obtained by ridding it of its globulins), upon old ulcers, local immunity to autolysins is established, and the ulcer rapidly heals. This has been demonstrated by local application to ulcers of fifteen years' standing. When administered internally, in gastric or duodenal ulceration, local immunity of the mucosa to gastrolytic toxins and enzymes which cause and maintain ulceration becomes established and healing takes place. The serum used is normal horse serum, or it may be an enhanced "antilytic" serum. Ten to thirty c.c. is given by the mouth in water three times a day immediately after food. In hæmorrhagic cases 60 to 80 c.c. may be given; and it seems to exert a marked influence over the hæmorrhage, which rapidly ceases. Previous and prolonged melæna soon comes to an end. Pain is quickly relieved and finally disappears, and secondary anæmia is benefited.

A patient with chronic gastric ulcer of over eight years'

standing, which had perforated eight years ago, was treated surgically at the time. Four years ago gastro-enterostomy was performed, with relief for a time. A recurrence of the symptoms, with severe pain, followed later and became persistent. The abdomen was reopened; the ulcer, still present, was found bound down to the liver; the stoma was in good condition. Nothing more, surgically, could be attempted, and the abdomen was closed. On my suggestion, serum was administered with a purely proteid diet, with rapid relief; and the patient told me that the serum had given her more comfort and freedom from pain than any other treatment.

The serum should be taken for at least six weeks, and may be prolonged with advantage for some time after symptoms have disappeared. The proteid diet should be used in conjunction, and kept up for at least six months. My friend, Dr. Hort, who first introduced this method of treatment to me, assures me that his results are eminently satisfactory; and from personal experience, and the treatment of a number of cases of gastric and duodenal ulcer occurring in others, I am of the opinion that this method is one which appeals to me as scientific and of great practical utility. I can strongly advocate it, and recommend it to you for your consideration and practice.

The serum must be fresh, atoxic and sterile; and I have invariably used that prepared by the Lister Institute and supplied by Messrs. Allen and Hanbury, of Vere Street, London. It should be kept in a cold place, or, better still, on ice. It is said to be reduced in efficiency by acids, heat, and age. No other medicinal treatment should be used with the serum, other than the aperient pill before mentioned; but the inter-prandial administration of natural alkaline water may be continued for obvious reasons.

I understand that there is no fear of anaphylaxis occurring by this method of oral administration: and it may be given at varied intervals without any unpleasant effect.

Needless to say that the serum has no effect in overcoming the effects and symptoms of stenosis. One feature of the treatment that appeals to me is that its aim is not only to heal local lesions, but to combat the so-called dyscrasia or general predisposition to ulceration through autolysis, and so, getting at the root of the mischief, prevent recurrence. I have used the serum in many cases of gastro-duodenal ulcer with marked benefit; in external ulceration it is of undoubted value, and in one case of tubercular ulceration of the bladder with distressing and painful symptoms, washing with normal saline, followed by the injection of 10 c.c. of the serum into the bladder twice daily and left

there, gave rapid and prolonged relief, and this after many other methods had been found ineffectual.

Operative Treatment.—I have very little to say about this. The question of gastro-enterostomy with its variations is the burning question of the day in reference to this condition. It may still be regarded as a therapeutic measure, for the surgeon is the therapeutic agent in the hands of the physician. The *rationale* of the operation to me seems sound, especially in cases where obstruction is present.

The method of *technique* is a matter of experience and choice. Which mechanical result is to be obtained depends largely upon the condition of things found at the time the abdomen is opened. Some surgeons favor the posterior "no loop" operation, others still the anterior operation. The choice is largely ruled by circumstance or necessity.

The results aimed at are:

- (1) Rest to the duodenum.
- (2) Prevention of mechanical irritation by food.
- (3) The provision of a second outlet through which food may pass.
- (4) The neutralization of gastric contents, or the outlet of them before maximum acidity is reached. My personal experience and in others is that acidity is quickly relieved.
- (5) The relief of pain. This is practically a certain result, at least in the early post-operative period.
- (6) The prevention of perforation and hæmorrhage.
- (7) A lasting cure and the prevention of recurrence.

The *technique* of operation has been improved to a maximum, and the mortality, apart from bad complications, reduced to a minimum. The statistics of most expert surgeons point to the minimum of danger in the operation and the hopeful prospect of complete recovery. The general metabolism is not altered further than the loss at most of 2 per cent. nitrogen and 2 per cent. fat.

The question has often been raised as to the efficacy of the stoma, and that material does not pass through it. Its efficacy for the relief of symptoms at first, I think, is undoubted; as to the passage of food, it is a difficult matter to decide. Bismuth meals with X-ray examination have in some cases failed to reveal any transit; in none of my cases have I been able to see the bismuth meal pass through the stoma. This may have been because sufficient time had not transpired before screening. In my estimation, bismuth meals are not quite natural, and may be opposed to the very purpose for which they are used. I have a

certain element of doubt as to the patency of the stoma being permanent. I cannot help thinking that cicatrization much reduces the size of the original aperture, and may in time obliterate it. There is no doubt in my mind that the use of the stoma is intermittent, unless there be constriction of the pylorus. I have noticed this in anterior cases, where the food would pass directly through and the stool be light-colored and greasy, the loop retaining the bile and pancreatic secretion, and its passage through the stoma produce pain in its position; at other times the food would pass round the duodenum, the pain being lateral and classic, and the stool a natural one and of normal color. Even when iron is administered in pill regularly at night, its blackening effect upon the faeces is never constant.

There are certain drawbacks to the anterior operation, and one particularly is that the food may accumulate in a long loop and cause severe pain in it, at the stoma, and by dragging in the back. This pain in the loop is sometimes intense and cannot be described; the nearest similarity is that of having a testis or ovary severely compressed. It may be advisable in corpulent patients to postpone operation for a period, and so restrict the diet as to reduce the weight and fat, in order that a posterior operation may be done more easily.

After operation, caution in diet should be enjoined for a prolonged period, a year or more, and those who have determined their disease by indulgence and indiscretion should be warned that any return to such a mode of living will probably bring about a relapse or other similar state, and they must never resume conditions which were responsible for their original breakdown.—*The Medical Press*.

Progress of Medical Science.

MEDICINE.

IN CHARGE OF W. H. B. AIKINS, F. A. CLARKSON,
BREFNEY O'REILLY AND F. C. HARRISON.

The Action of Digitalis in Irregular Heart

Edens (*Therap. Monat.*) discusses the action of digitalis. After noting that the best results of the drug are to be found in mitral insufficiency giving rise to feebleness of the heart's action and quickened pulse, he passes on to consider its action in other forms of irregular heart. In one case of atrio-ventricular extrasystole he administered the drug intravenously, and instead of producing an improvement in the condition an increase of extrasystoles occurred with collapse, but this was not the case when the drug was given by the mouth. The author also refers to the occurrence of pulsus bigeminus during the use of digitalis, and to what has been called pseudo-alternans. In this latter condition the frequency of the heart beat is so great that the pulse succeeding the second systole in the pulsus bigeminus is no further distant than that between the first and second systole in the bigeminus. As a result of digitalis, therefore, a double rhythm of the whole heart, auricle and ventricle, appears to occur, but the author considers this is only due to a bigeminus of the ventricle. Digitalis acts in many cases adversely where conductivity is lowered, although in some cases it seems to produce an improvement in conduction power, but on the whole Wenckebach's original rule still holds good—that disturbances of conduction are not suitable cases for digitalis. In cases of so-called arrhythmia perpetua, the author notes that digitalis has a favorable influence.—*Brit. Med. Journal*.

The Treatment of Morphinism

P. Schroeder (*Berl. klin. Woch.*) finds that just as the physician used to fear the onset of disastrous symptoms when an alcoholic was treated without any alcohol, the majority of physicians are afraid to withdraw morphine suddenly lest "abstin-

ence" symptoms develop. He shows that this doctrine is taught in text-books and monographs, even by such authorities as Erlenmeyer, Kraepelin, and others. The symptoms which are most dreaded are attacks of cardiac weakness, severe attacks of excitement or mania (the delirium of morphine), collapse, irregularity of the pulse, sleeplessness, diarrhoea, vomiting, etc. Schroeder states that this fear is unfounded. During the past few years no morphine has been given to the majority of the morphinists admitted into the Breslau psychiatric clinic. A few patients, it is true, were given small doses soon after admission. He gives the details of a number of cases, from which it appears that no signs of serious disturbance due to the sudden withdrawal of the drug arose. In no case did he experience even a temporary delirium or collapse, and in many of the patients the quantity of morphine taken right up to the time of admission was very considerable. He found that a sense of discomfort, sleeplessness, shivering, and occasional vomiting, which were produced by the withdrawal, only lasted for from three to five days on the average, and that these symptoms were never severe. In those cases in which a congenital degeneration of the nervous system existed, the signs of an associated degenerated character became apparent during the period of withdrawal. As a rule, the patients put on weight during the first week. It is frequently urged that it is immaterial to the result of the treatment whether the withdrawal is completed slowly or rapidly. Against this, Schroeder finds that the patient, his relatives, and his doctor appear to be content to postpone any such treatment until numerous abscesses, cachexia, the occurrence of attacks of excitation, or other complication render it absolutely imperative, and then the chances of success are far less good than before. He claims that his records prove that the onset of severe and threatening symptoms due to the sudden withdrawal of morphine is imaginary. The most important therapeutic measures must be directed to the condition of the heart and to the general condition. Small doses of other hypnotics act well during the first few days. He further finds it valuable to impress on his patients, who can usually be made to believe it, that the treatment is not dangerous and that no morphine can be allowed in future under any circumstances. Their pains and other symptoms are usually no longer present by the time they have got back enough energy to take matters into their own hands, and the desire for morphine, as a rule, has disappeared for a time. They must, however, be kept under continuous supervision.—*British Med. Journal.*

Bismuth in Gastric Therapy

A. Goldman (*N. Y. Med. Jour.*) analyzes 100 cases of gastric disorder in which bismuth was used in doses of one-half to one dram one-half hour before eating, in half a glass of water; also in combination with magnesia usta and sodium bicarbonate. It is concluded that bismuth given in doses large enough acts mechanically, forming a coating on the mucous lining as well as reducing the acidity of stomach contents markedly, differing from alkalies in that it does not stimulate the flow of gastric juice. Given in cases of gastrosuccorrhœa it retards secretion and coats the stomach, relieving it of the gnawing pain and doing away with nausea. It acts much more powerfully on a fasting stomach.—*Medical Record*.

Composition of Renal Calculi

In a Hunterian lecture at the Royal College of Surgeons, Professor Moore, of the University of Liverpool, shows that the exact chemical nature of renal calculi has never been properly studied, and that the usually accepted method of judging the composition from the physical appearance of the stone is altogether erroneous and productive of a false conception of the etiology, and hence the subsequent treatment of the condition. The lecture is published in a recent number of the *British Medical Journal*, and is of great interest. Because practically all stones give a qualitative test for urates, the general conclusion has been that the great majority of calculi are formed of uric acid and urates, and there has always been a tendency to associate lithiaris with gout, and treatment has been directed towards overcoming, by a purin-free diet, this so-called diathesis. The author has made careful quantitative examinations of 24 renal calculi, and his analyses show that the most common constituent is calcium oxalate, and the next most frequent is tricalcium phosphate. Uric acid only occurs in small quantities.

This abundant and frequent presence of calcium in renal calculi must lead to changes in the commonly accepted ideas of the metabolism of calculi, and opens up a field in the investigation of calcium metabolism. Into this subject the writer does not enter fully, but points out that in recommending diet after removal of calculi containing calcium salts, it would seem rational to eliminate foods rich in calcium, such as milk in all its forms and vegetables rich in calcium, together with all liquors

in which calcium has been used to remove various undesirable ingredients. Treatment by alkaline waters is contra-indicated, as they tend to precipitate calcium. Acids would rather be indicated.

The deposit of calcium in the form of renal calculi is, in Dr. Moore's opinion, based on the same factors governing the deposit of calcium elsewhere, as in normal bone, gouty deposits, tuberculous foci, arterio-sclerosis—a condition of diminished oxidation resulting in the appearance of calcium salts of incompletely oxidized bodies, such as calcium oxalate, urate and phosphate. With old age, the alkalinity of the body fluids increases, hence the increased deposit in later life.

F. C. H.

Iodides in High Blood Pressure

In the pages of the *Edinburgh Medical Journal* is printed a most useful and practical research by Dr. Matthew into the effect of iodides in reducing high blood-pressure and into the comparative values of various organic iodine compounds which are extensively advertised as proprietary products by various enterprising Continental and American firms of manufacturing druggists. The author begins by recounting the unsatisfactory results following the use of nitrites, benzoates, hippurates, diuretics, thyroid extract, mercurials, Trueneck's serum and other reputed remedies for hypertension: all these he tried without permanent benefit, except that mercurials sometimes did good by removing the source of an intestinal toxæmia. The rationale of the undoubted effect of iodides in reducing blood pressure has been much debated. Romberg, and afterwards Muller, thought it to be solely due to diminished viscosity of the blood. Huchard ascribed it to vaso-dilatation; Janeway, to an action on the vessel walls. Rolleston holds that the effect is indirect, and due to a stimulation of the internal secretion of the thyroid gland. The author concludes that iodides have a specific action in cases of high blood-pressure before arterio-sclerosis has set in, but that they have no effect when once the latter condition is well established. The vaso-dilatation is, he thinks, exactly similar in kind to that of nitrites, but slower in onset and much more prolonged. This action of the iodides is useful in the earlier stages of chronic nephritis, for so-called idiopathic high blood-pressure, and for aneurism.

Dr. Matthew then proceeds to the really more important,

because more novel, part of his paper, and examines critically the claims made on behalf of the organic iodides, of which he selects for investigation five—namely, tiordine, iodoglidine, sus-tenin, iodipin, and sajodin. The method of judging them was to administer such a dose as would contain 1.5 grain of iodine to patients with marked hypertension, and then to test the urine for iodine. From the table given it appears that the first of these preparations never caused the appearance of any iodine in the urine at all, though the experiment was repeated several times. The second, third, and fourth caused iodine to appear in the urine just as soon and to remain just as long as when the inorganic salts are given. Of the fifth it does seem to be true that elimination is delayed, and therefore that the results of administration may be rather more lasting. When doses were given t.i.d. in the usual way, the same results were obtained; sajodin established a slight but definite superiority over the others, but the inorganic salts appeared to act just as well. Clinically, sodium and potassium iodides were far superior to any of the organic salts; and the latter are, of course, many times as expensive and require to be given in much larger doses. As for iodism, the author holds this to be a matter of idiosyncrasy; and he attributes any smaller incidence of iodism among patients taking organic iodides solely to the fact that as a rule the doses given contain less iodine than the ordinary salts. For patients whose stomachs will not tolerate the latter, he finds sajodin sometimes useful, as it is tasteless. For hypertension his recommendation is ten-grain doses of potassium iodide, rapidly increased if necessary. —*The Hospital*.

Anaphylaxis

Drs. Minet and Leclercq, who have made a special study of the condition of anaphylaxis, find that the anaphylactic toxin is very fragile and can be destroyed, or at any rate disappears from a mixture of horse-serum and blood from a guinea-pig immunized against horse-serum by keeping it *in vitro* for six hours at the ordinary temperature of the laboratory. If the mixture is then injected into a fresh guinea-pig it is not sensitised passively, that is to say, the animal is not affected by an injection of horse-serum on the following day; but it is sensitised actively, that is, at the end of a fortnight an injection of horse-serum produces severe symptoms of anaphylaxis. The

authors conclude from this that by keeping the mixture *in vitro* for six hours the toxogenin disappears, but the substance that excites active sensitisation remains. In the same way, by keeping a mixture of guinea-pig's blood immunized against diphtheria and anti-diphtheritic serum *in vitro* for six hours the anaphylactic poison is destroyed. The practical result of these findings is that if it is desired to re-inject an antigen or anti-toxic serum into an animal already sensitised, as in the case of repeated injections of anti-diphtheritic serum in cases of diphtheria, in order to prevent the occurrence of anaphylactic symptoms, the animal or subject should be bled first to the amount of serum to be injected and the two mixed together in equal quantities and kept *in vitro* for six hours. If the mixture be then injected no anaphylactic symptoms should result.—*The Hospital*

OBSTETRICS AND GYNAECOLOGY.

IN CHARGE OF ADAM H. WRIGHT, K. C. M'ILWRAITH, FRED. FENTON
AND HELEN MACMURCHY.

Multiple Caesarean Section

Dr. Ross McPherson, in a paper published in the *American Journal of Obstetrics*, reports thirty-nine cases, as follows:

In thirty cases the operations were performed for the second time, in seven for the third time, and in one each for the fourth and fifth times. In eighteen cases there were no adhesions present at all, in eleven very few, in seven there were many, in one the uterus was adherent to the abdominal wall and in two cases no note was made. The uterine scar of former operations was not seen in nine cases, was normal (by this we mean not thinner than the rest of the uterus), in twenty-five cases, was very thin in four cases, and was ruptured in one case, the latter being one where many adhesions were noted.

In the series there were three deaths of mothers; one from anaesthesia, occurring on the table before the uterus was opened, the second from sepsis on the third day, and the third from pneumonia on the fifth day. One child died of hæmophilia on the sixth day.

Thus we observe from the foregoing analysis that the repeated operation offers very little danger over the primary, and that in cases where some obstruction to labor exists, such, for example, as contracted pelvis, that there is no logical reason why the patient should not become the mother of a normal family, with periods of quiescence and comfort between pregnancies, making the operation of sterilization unnecessary and, in the writer's opinion, as a routine measure distinctly unjustifiable. Caesarean section, while not difficult in the hands of an experienced operator, requires strict attention to certain points of technic, which, as observed, should terminate in a successful result for both mother and child.

Eclampsia

Cragin and Hull advocate the use of ether as an anaesthetic in eclampsia. From their observation on patients and experiments on dogs they are convinced that chloroform should be

entirely abandoned and ether substituted. In twenty cases of eclampsia, treated at the Sloane Maternity Hospital, no attempt has been made to control the convulsions by means of the anæsthetic. This end has been sought through lowering the blood pressure and quieting the nervous system by the use of veratrum, chloral, and nitroglycerine. Ether has been used whenever an anæsthetic has been required during the delivery. Former experiences with attempts to control the convulsions by chloroform proved that it was practically impossible. Recent experiences without attempts to control the convulsions by an anæsthetic have given results which compare favorably with those of former methods. Of these twenty patients only one died, and she was practically moribund when brought to the hospital, with jaundice, vomiting, scanty and bloody urine, and with the liver necrotic. This gives a mortality of five per cent. In the last twenty cases of eclampsia in which chloroform was used there were five deaths, a mortality of twenty-five per cent. In a series of 20,000 deliveries previous to this last year there were 251 cases of eclampsia, with a mortality of seventy-one, *i.e.*, twenty-eight per cent. Davis and Foulkrod state that eclampsia is a distinct disease, with varied manifestations and a definite pathological picture. There is some relation between the fact that an altered nitrogen ratio is found in the excretions, and the fact that the liver is the organ most seriously involved. A study of this progressive nitrogen disturbance may prove a guide as to the point beyond which the liver involvement cannot go and allow regeneration and recovery. While no placental theory has yet been proved, the most plausible theory is that some ferment from the placenta may prove responsible as a primary cause for the condition because of deficient or deranged action. Any pre-existing permanent pathological condition may prove an exciting cause, and still perhaps act by disturbing placental function. Eclampsia should be a rare condition in the hands of a skilful, thorough investigator.—*Jour. A.M.A.*

Eclamptic Mothers and Nursing

Goodall (*Arch. of Ped.*, January, 1911) has met with several cases of seemingly healthy infants, born of eclamptic mothers, who showed no symptoms of illness until the first copious nursing, when they suddenly died without apparent cause. Referring to the literature on this subject, it appears that such children

have often been found to show signs of general intoxication, and in a large percentage the lesions were identical with those of eclamptic mothers who had succumbed to the disease. Children born of such mothers are far from being healthy. Those which survive and those which die in whom the urine is examined show signs of renal injury; therefore one must consider these children as tainted with the same disease as the mother. Since the mother's blood is saturated with the poisons of metabolism to such a degree as to cause cerebral disturbances culminating in eclamptic seizures, the secretion of the breast will be tainted with the same metabolic products. We may therefore assume that the toxins are eliminated in the milk, and it has been shown that the urine of eclamptic women is less toxic than their blood. By the analogy of drugs we have strong proof that the mother's milk can secrete a more concentrated toxin than that which circulates in her blood. Arsenic administered by the mouth to the mother is found to be ten times stronger in her milk than in her urine; the child therefore receives a larger dose of poison through the milk than it did through the placental circulation. When full diuresis and elimination occurs in the *post partum* days, by the time the breasts begin to secrete actively there is a low grade of toxæmia present, and the child may escape; but in cases where elimination fails, toxæmia reaches its height during full lactation with fatal results. Eclamptic convulsions seldom, if ever, come on in pregnant women without uterine contractions having set in. The toxin is thought to be of foetal origin. Therefore compression of the large uterine lymphatics and cavernous sinuses throws a large amount of toxins into the maternal circulation, and this flooding of the organism with noxious products finds expression in eclamptic convulsions. In mothers who are toxæmic and jaundiced it is advisable to feed artificially for quite a few days, and to have the breasts pumped dry once or twice after the maternal toxæmia has improved and before the child is allowed to nurse. When the convulsions come on *post partum*, the maternal elimination should be prolonged until she is freed from the greater part of her toxæmia, and then the breasts should be emptied before allowing the child to nurse. Where albuminuria persists after gestation, it is well to feed artificially throughout.

In 1908 Momburg published a short preliminary report of his method of producing an artificial anæmia of the lower half of the body by winding a rubber tube tightly around the waist-line. To-day the advantages and dangers, the indications and

contraindications of Momburg's method seem well understood, and without exaggeration it can be stated that Momburg has given to the profession one of the most valuable and effective methods of arresting the most dangerous forms of hæmorrhage.

The following is a description of the technique: The end of a piece of soft rubber tubing, having the thickness of the index finger, and a length of about four feet, is passed through under the back of the patient, to be grasped by the hand of an assistant who stands at the other side of the operating table. The tube then is stretched to the utmost, and, thus stretched, is passed by the surgeon midway between the border of the ribs and the iliac crest across the abdomen to the other hand of the assistant, whose duty it is to maintain the tension. The free end of the tube is now led back under the patient by the surgeon and is again put to the stretch, the assistant in the meantime gradually releasing the bent of the stretched tubing which now firmly encircles the waist. While this is being done another assistant places his finger on the femoral artery to ascertain the moment of the cessation of the pulse. Observing the same steps, two, three, or more turns of the tubing are exactly superimposed until the femoral pulse disappears. In slim individuals two turns will suffice. In fat or muscular ones as many as six may become necessary. As soon as the femoral pulse is suppressed the ends of the tubes are crossed, to be secured by forceps or ligature.

For how long a time can aortic compression be exercised without detriment? Momburg himself used it up to 45 minutes. Englemann placed the bandage on the same patient three times in short succession, leaving it in position during the total time of one hour and 45 minutes. Sigwart in one instance left the belt for two and a half hours without noticeable harm. Gerster thinks that the constriction could safely be continued for three hours.

The obstetrician will find this new method of greatest value as a means of checking promptly a profuse uterine hæmorrhage. Indeed, it seems that the method has been most often and most successfully employed in cases of serious post-partum hæmorrhages. In obstetrical practice the belt most often is applied soon after delivery. The abdominal walls are relaxed and the suppression of the pulse in the femoral artery will be obtained with a comparatively small amount of constriction.

Most writers also emphasize the peculiar fact that the constriction, with comparatively rare exceptions, causes strong uterine contractions, thus adding an important factor in the

control of post-partum hæmorrhage. Weber applied the belt in cases of profuse hæmorrhages due to a retained placenta, and saw the placenta expelled spontaneously within 15 minutes without any further loss of blood. If necessary, in such cases of atonic hæmorrhages, during the constriction, the placenta can be removed manually without hæmorrhage. At times, however, a firm contraction of the uterus occurs only when the belt is removed.

The belt has proved extremely satisfactory, according to a report of Seitz, in 15 cases of placenta prævia treated by means of vaginal hysterectomy. All mothers recovered, and of the ten children living at the time of operation, nine were saved. In his belief these splendid results are due to the fact that the belt permits a slow and careful operation. Sigwart thinks that vaginal Cæsarean section for placenta prævia has been abandoned on account of the danger of serious hæmorrhage. This danger now is safely obviated by the use of the constricting belt. He performed the operation twice successfully for placenta prævia.

The method can and should be used by the general practitioner, but not indiscriminately. It is not free from dangers; these dangers, however, will count naught in those desperate obstetrical hæmorrhages in which the belt offers the one reliable and ready means of checking the flow of blood promptly before life is extinct.—*Abstract, Ehrenfest Interstate Med. Jour.*, April, 1911.

(The term "constriction-belt" is apt to convey a wrong impression, as it is really a tube. All that is required is a strong rubber tube about one inch in diameter, and five or six feet long. It should be understood that its use is justifiable only after the ordinary treatment has failed.—A. H. W.).

Artificial Respiration in New-Born; Buist's Method

I place the child face downward on the palm of my left hand with the head away from me. The upper and lower parts of the body and the limbs are thus dependent over the edges of the hand. I then roll the child over, and at the same time transfer it with a slight throw to my right hand in the dorsal position, the legs and arms being again dependent. It is then again retransferred to the left hand in the first position and the whole movement is repeated 12 to 16 times a minute.—*Med. Review.*

SURGERY

IN CHARGE OF E. E. KING, G. A. BINGHAM AND
C. B. SHUTTLEWORTH.

Icterus After Salvarsan

Icterus in initial syphilis is by no means a rare coincidence. It should, therefore, not surprise the reader to find jaundice in the course of a salvarsan treatment. The only wonder would seem to be that it does not oftener occur; for the course of a salvarsan treatment might be expected to increase the percentage, on physiological grounds. It is known that salvarsan seems to set up a late icterus—in fact, the whole phenomenon is a rapid one. Now an early syphilitic untreated can set up the same syndrome; so that we are anxious to learn the part played by salvarsan injections. This would seem to be involved in the more recent articles on salvarsan as a protective and curative factor in lues.—*Medical Record*.

Salvarsan

D. W. Montgomery, San Francisco (*Journal A.M.A.*) says that one-third by weight of salvarsan is arsenic. Therefore, in administering 0.6 gm., the ordinary dose, we are giving the patient 0.2 gm. of arsenic, or many times the toxic dose in ordinary pharmaceutical preparations. Great care should, therefore, be observed in giving it. It is put up as a dry powder in glass tubes, and in this form seems to be stable. In solution, however, it quickly decomposes, especially if the solution is alkaline. It is given suspended in oil or as a solution, and must be made up fresh each time. He has never seen it given in oil, but it has been so given by Neisser, who recommends oil of sesame. The acid watery solution is very painful when injected, and should be made either alkaline or neutral. The trouble and care required have induced various modifications of the technic, but he has seen the best results by comparatively simple methods. Lesser has used Alt's method of intramuscular injection into the gluteus without accident and without necrosis or abscesses, but he always taps wood when he speaks of his good luck. He first takes salvarsan 0.5 or 0.6 gm. and warm water 5 or 6 c.c.,

and mixes them together in a glass-stoppered graduated glass cylinder with glass balls to facilitate solution. He then adds 3 c.c. of sodium hydroxide (4 per cent. solution) and again shakes, adding drop by drop more of the sodium hydroxide solution until that in the glass cylinder is clear. Normal salt solution may be added up to the 10 c.c. mark, and then injection is made into the gluteus. If Ehrlich's ideas as to the sterilization of the body are correct, the intravenous method is the only correct one, and it has the further advantage of being painless. Montgomery gives in full detail the technic for the preparation of the solution for intravenous injection and the technic of the method as carried out by Schreiber, of Magdeburg, following more closely that of the latter. He specially emphasizes the importance of having the solution perfectly clear, with no undissolved particles, the assurance of the fact that the needle is in the vein and the importance of the injection of a small quantity of normal saline solution just before and after the salvarsan injection. The injection should be slow, taking five or six minutes, so as to avoid sudden overloading of the circulation. All instruments should be most carefully sterilized, and cork stoppers should be avoided and glass ones used instead. If it is desired to neutralize the fluid for injection after it has been made alkaline, it is best done by adding, drop by drop, a 1 per cent. glacial acetic acid solution, testing the neutral point by letting a drop of the fluid fall from the tip of a glass rod on litmus paper. For the fuller details of the technic the reader is referred to the article.

Ex.

Insufflation of Oxygen in General Peritonitis

Oxygen blown into the peritoneal cavity through the drainage tube in general peritonitis has a mechanical action in preventing adhesions, as well as a bactericidal action, and has been found of considerable value. Weiss and Sencert, of Nancy, published their results in May, 1910, and S. Banzet records another case treated in this way in *La Presse Médicale* for February 1, 1911. In Banzet's case the peritonitis resulted from a ruptured parasalpyngian abscess, which was drained after laparotomy, and the use of oxygen commenced at once. All the signs of an alarming condition of a few hours before were changed by the operative procedure and the oxygen treatment with which it was followed. The continuous use of the gas aids in the removal of fluids from the abdomen, and improves the general condition of the patient remarkably. The amount of secretion is in-

creased by this process, which is auxiliary to the drainage. The oxygen kills all the anaerobic micro-organisms, or arrests their multiplication. It also diminishes the virulence of the aerobics and the activity of their toxins. An increased hyperæmia produced by the oxygen favors phagocytosis. The absorbed oxygen acts as a stimulant to the cardiovascular system and the respiratory apparatus; it combats the intestinal paralysis and increases kidney action, and the resultant diuresis helps to carry off the infectious products. The tubes should be so arranged that the gas will pass to the lowest portion of the abdominal cavity. It should run slowly and may be taken from an ordinary tank or from rubber bags.—*Medical Record*.

Sweating and Anaesthesia

Sweating occurs under two conditions during anæsthesia. In the first case it is very often seen during the induction stage, when the patient is breathing stertorously, and it is then usually associated with a flushed warm skin. In the other case it occurs late in the anæsthesia, and is entirely different in type from the former. The skin is then generally pale and very cold, and the sweat appears in beads all over the body, more particularly on the forehead.

THE CAUSE OF SWEATING.

Physiologists tell us that the blood pressure has nothing to do with the secretion of sweat, but whether this be so or not these two forms of sweating occur, the one when the blood pressure is high, and the other when it is low. The first form is particularly liable to occur in fat, heavily-built people, and is seen more particularly when ether is the anæsthetic used. It is more likely also to come on when there is some degree of cyanosis. This form is associated with marked muscular action, and this is the reason why some surgeons do not like ether as an anæsthetic, because they say that the preliminary stimulation reacts on the patient later.

When a preliminary dose of one of the opium compounds now so frequently used as concomitants to general anæsthesia has been given, sweating is much more common. For example, when morphine has been used without atropine, sweating of the uncovered parts more especially is marked, with atropine in combination it is not so striking. With the newer opium deriva-

tives, such as pleistopon and pantopon, sweating may on occasion prove troublesome, the patient's shirt becoming almost saturated. This is especially the case when no oxygen is administered at the same time as the anæsthetic, and when open ether is given in combination with pantopon or scopo-morphine.

THE IMPORTANCE OF THE SECOND TYPE.

The other form of sweating is of much greater surgical importance. It occurs when the blood pressure is low, and is a sign that shock or collapse will shortly supervene, and therefore it is a thing which the anæsthetist will always be anxious about, particularly if it occur early in a long operation. Its importance lies in that it is an indication of serious vascular disturbance rather than in the mere fact of its occurrence. It should always be a sign for which the administrator should be on the lookout; as soon as it is observed steps should be taken to combat shock by injection of fluid into the system and by raising the blood pressure with such drugs as pituitary extract. It is better, however, rather to prevent its occurrence by putting the fluid into the patient before the operation than by trying to treat the shock after the sweating has already occurred. For that reason the anæsthetist should examine his patient carefully before giving the anæsthetic, not merely with regard to lung and heart conditions, but also with regard to blood pressure and liability to shock. This last is, of course, exceedingly difficult to estimate, but practice and experience will enable the anæsthetist to recognize, just as easily as the experienced surgeon does, those cases in which prophylactic measures should be taken to obviate any danger from shock.—*The Hospital*.

Convulsions After Orthopaedic Operations

About a year ago Dr. Schanz drew attention to the fact that convulsive fits are liable to follow orthopaedic operations, especially in young children, which may prove fatal. The hypothesis offered to explain these convulsions was that they were due to fatty emboli caused by the liberation of fat from the bone marrow into the general circulation. On this hypothesis Dr. Schanz proposed to treat the condition by intravenous and subcutaneous injections of saline solution. In a recent communication to the *Deutsche Medizinische Wochenschrift*, Dr. Codivilla puts forward a different explanation of the phenomenon. He has observed nine cases of the condition, and he attributes the con-

vulsions to the excessive tension to which the soft parts of the extremities, including the nerve-trunks, are subjected in consequence of the traction often necessary to correct the deformity. Reflexly, this tension of the nerve-trunks sets up a condition of excitation in the central nervous system which finds expression in the convulsions. This hypothesis receives confirmation from the experimental research of Dr. Neri. He has been able to produce sudden attacks of convulsions in animals by exercising strong traction on the soft parts of one or both of the lower extremities. In cases in which traction is applied to both limbs the convulsive phenomena are much more frequent and more severe. According to Dr. Codivilla these convulsions are more likely to occur in patients with some neurotic taint, or predisposed to epileptic attacks. From a therapeutic point of view Dr. Schanz's method of treatment with saline injections would appear irrational according to this latest causal theory, although Dr. Codivilla suggests that an increase in the volume of blood might assist the nerve-centres by increasing the nutrition and organic changes of the tissues, but he thinks the most important principle of treatment consists in relieving at once the tension and traction on the tissues. He suggests further that in cases in which there is some neurotic taint or liability to epilepsy, any manipulation should be preceded by a course of bromide, and that any extension or traction of the soft parts that may be necessary should be carried out gradually.—*The Hospital*.

Reports of Societies

ACADEMY OF MEDICINE, TORONTO

At the monthly meeting Dr. A. A. Macdonald, the President, occupied the chair.

Dr. John Ferguson was asked to act as Secretary in the absence of Dr. Harley Smith.

WHAT WE KNOW ABOUT TUBERCULOSIS.

The President introduced Dr. Reynold Webb Wilcox, of New York. He said that Dr. Wilcox was well known as a clinician, teacher and author. The subject of his address was "What We Know About Tuberculosis."

Dr. R. W. Wilcox said he was as much a student now as he was when he received his degree from Harvard thirty years ago. A medical man only began his real period of study when he commenced to practise, and he should not cease to be a student till he gave up practice.

He said that the three great scourges of modern civilization are alcohol, syphilis and tuberculosis. Alcohol incapacitates each day about 15 per cent. of the workers, and causes about one-half the debt of the municipalities. Syphilis prevailed because of the lack of knowledge and education among young males, and the wages paid so many young women. Moral training will here tend to improve the human race.

With regard to tuberculosis, he would give the conclusions he had arrived at after thirty years of practice and study. He would deal with the subject in a practical way.

He said that the axiom, "No bacillus no tuberculosis," was true. This, however, is not the same as "No bacillus found no tuberculosis." There had been a good deal of evidence produced that the bacillus may at times lose its acid-fast character and not yield to the usual methods of staining.

There were characteristics in common to the human, the bovine, the avian and the piscine varieties of bacilli; there were marked divergences also. Under certain conditions the bovine bacillus might become virulent and infective for man.

He then went on to speak of the soil or proclivity to the disease. He referred to the relative immunity of the Hebrew race. He was of the opinion that many of the deaths among children were due to infected milk, but in early adult life the

cause of infection was mainly contaminated dust. Hereditary infection was quite rare, compared with the foregoing. One of the main objects to aim after is cleanliness from dust, flies, bad air, bad milk, etc. The bad influence of overcrowding is apparent to all, and the disease is six-fold more fatal among dwellers in crowded quarters.

Though the implantation of the bacillus is a necessary condition, yet without a suitable soil this implantation is not likely to be very serious. Prevention is theoretically possible, but not so probable, as the bacillus has such a wide distribution. The most important question for our attention is the maintenance of a high degree of resistance in the individual. But here comes in the difficulty of raising the degraded to higher ideals. The victim puts the blame on the bacillus which he should put on himself. The extermination of the bacillus is an idle dream; not quite so with the improvement in social conditions.

It would seem that a certain immunity is being acquired. The dwellers among urban communities, where the disease prevails, seem to impart some immunity to their children. During life a sort of immunity is acquired, so that, with advancing age, the liability to infection becomes less. Early attacks that are recovered from seem to render the person more resistant against reinfection. The immunity secured from the use of tuberculin is of doubtful value.

He then dwelt upon the great importance of an early diagnosis. The duty of the attending physician was emphasized in this regard. If treatment was to be of any value, it must be instituted early in the disease. There was little to be done for the chronic, advanced and open cases. The state of the various organs must be studied, especially the stomach and digestion. It is far more important to know what sort of man has got the disease than what sort of disease has got the man.

He spoke very strongly against therapeutic nihilism in the disease. Much can be done by wise treatment. While wholesale fear was bad, a healthy fear quickened the mind for the reception of proper measures of treatment and prevention, and in this way much good was the result.

He discussed at some length the weather and climatic conditions best suited for tuberculosis. The air should be dry, but as far as possible free from dust, and of equable temperature. The environments should be cheerful. The food should be good in quality and sufficient in amount. Suitable occupation was of much value, as it gave some income and engaged the mind. The open-air treatment can be secured in many ways, such as a

veranda, a house-roof, a garden, etc. Dust can be removed from the air by means of a little cotton wool in a mask. The irritating effects of the air can be lessened by means of a few drops of an equal mixture of chloroform, alcohol and creosote on the mask.

On sanatoria, Dr. Wilcox remarked that while they were of much use, they were not equal to home treatment, if the home was reasonably comfortable. The poor can be best treated in general hospitals, and with proper care there was no danger of infection, as the records of Brompton Hospital clearly showed.

Careful attention was given to the feeding of patients and the employment of gavage recommended, especially in case of tuberculous laryngitis. The method of making beef powder was taken up. Three-fourths of a pound of this powder, with three times as much milk, is poured through the tube. This is given twice a day. At first smaller meals at more frequent intervals is sometimes better.

Of drugs, considerable credit was given to creosote, or creosote carbonate. Sodium hypophosphite, in the early stage, and calcium hypophosphite in the later stage, were of much value. Mercury succinimide, in one-fifth grain doses, hypodermically, every second day for two months, to be followed by potassium iodide, half a drachm each day for two weeks, and then rest a week and repeat the treatment by the mercury and iodide.

Each case must be treated on its merits. There is no method for every case.

The following conclusions were laid down:

1. It is an infectious disease that is only possible when a suitable soil is present, upon which bacillus can be successfully implanted.

2. Tuberculosis of itself is rarely fatal; resulting secondary infections, terminating in tuberculosis septicæmia, are of grave import.

3. Pathisiophobia which is intelligent and productive is to be encouraged; if it is based upon ignorance or sordid motives it is to be severely dealt with by an enlightened profession.

4. No single method, means or place is adapted to any patients afflicted with tuberculosis; individualization of disease and victim is imperative.

5. The physician who will obtain the best results is the one who will supplement a broad knowledge of the patient and the disease by an intelligent, diligent and confident treatment.

6. Real advances in medicine are never based upon hyster-

ical, partisan or selfish movements; they come from intelligent, scientific and conscientious observations and logical deductions therefrom.

DISCUSSION.

Dr. W. B. Kendall said he had listened with pleasure and interest to the paper. The subject is a broad one, and we must aim at finding out what we do not know. A man is only as strong as his tissues, and we must try to produce immunity. The Jew is said to come first and the Anglo-Saxon next. The negro is very low in his resistance to the tubercle bacillus.

Immunity may be by the patient or by artificial means, as the tuberculines, the serums and the antitoxins. He thought that cases could be better treated in institutions than at home. In some cases patients are much more ostracized at home than in a sanatorium. He did not believe in over-feeding. The same purpose could be secured to a great extent by smaller meals oftener given. The mercurial succinimide had not here given very good results.

Dr. Dobbie thought that much could be done by teaching children. They can be easily taught, and in this way soon learn to do what is right in the care of their health and the prevention of disease. They readily learn the laws of hygiene. This is the most important point in the management of the disease.

Dr. Strathy thought the Jews of Toronto did not show a high resistance. At least this was the result of hospital experience here.

Dr. Caulfield congratulated the author of the paper, as the statements were sound. He agreed that the resistance of the patient was of more importance than the bacilli. The number of bacilli was important, and the secondary infections were of great importance. The tubercle bacillus was not the sole factor. The incipient cases were important. In some instances cures readily came in these cases. He was glad that the author of the paper had said there was no specific treatment, and also that he had not said there was any serum treatment.

Dr. H. M. Parsons endorsed the idea that we must treat the patient and not the disease. He did not think the Jews were specially immune. He spoke very highly of the work of Sanatoria in the case of the poor. In the well-to-do this was not so important. The sanatorium taught good rules of living, and the patient was inspired with hope. In the case of children, we meet with the earliest instances of infection. In the adult, the conditions are often the result of repeated infections. He endorsed the paper.

Dr. J. H. Elliott said that the disease was met with in the rich as often as among the poor. The percentage is about the same in both classes. This was the outcome of his own study. The early diagnosis was all-important. It was necessary to be careful and try to detect the disease early. In this way we could do more for their cure. He said that 40 per cent. of deaths were due to this disease. He felt that these patients might be treated in general hospitals. He said that nurses were even afraid to nurse consumptives. This ought not to be the case, and he was strongly of the opinion that all general hospitals should admit these cases. There were sanatoria for about 2 per cent. of the cases. He held that these cases could be well treated at home. There was no specific treatment. There were some broad general rules, but we must look after the patient on general principles, and in detail for each case.

Dr. G. D. Porter said it was widespread, and it was infectious. He said we should regard all cases of cough, anæmia, loss of strength, etc., in weak people as being tuberculosis until we found out that such was not the case. The sanatorium was the outcome of the neglect of the general hospitals. We have now twelve in Ontario. They are greatly needed, and are doing much good. There may be some hysterical and foolish fear, yet good had come of what had been said. He appreciated the paper.

Dr. J. W. S. McCullough said he knew Dr. Wilcox well, and had followed his writings. In one town a movement to found a sanatorium had been defeated by the trustees of the hospital. In another town a sanatorium had been prevented by the fear that it might depreciate the value of a certain college property.

Dr. N. A. Powell said that Mr. Gage had offered \$25,000 to Toronto for a sanatorium if the city would maintain it. This was not taken up. The sum now invested in this Province in sanatoria was \$400,000. He thought that before three years more had passed there would be \$1,000,000 so expended. He agreed that home treatment was good. But few homes were ideal. The physician must never forget the individuality of the patient. The medical profession had not always done their duty in recognizing the cases early enough.

Dr. Mullen was afraid that in sanatorium work there was too much tendency to make the patient feel he was getting all the good that could be secured. He felt that cases should be watched after they left the sanatorium. It was wrong to lead patients to think they were cured. Dr. John Hunter said that in fifteen years he had not known a single death in the Orphans'

Home. The children had been given lots of milk, and no case of bovine tuberculosis infection had been observed.

Hon. John Charlton said that doctors on this occasion had agreed. He would ask the medical men to impress the legislators of this country with the importance of the disease. If a hog is taken ill with tuberculosis, the Government will send a man to look after the animal. If a man or woman is taken ill, the Government will do nothing. The Ontario Government will give \$3.00 a week when the patients do not pay more than \$1.00 a week. Medical men should use their influence to enthuse the public with a desire to help.

Dr. John Ferguson said that about \$50,000,000 annually was lost to Canada in deaths and time due to tuberculosis.

Dr. R. W. Wilcox, in reply, said he appreciated the way in which the paper had been received. He wished to emphasize the personal element in the patient. Some have greater resistance. He again emphasized that home treatment was very good, and he held that work was good, as shown in the case of convicts. Preventorium work is all right, but may cause too great fear. Wholesome fear was good. The kind of disease, the kind of patient, and the kind of physician counted for much. Canada had sent to his classes fine students. The soil is very important. All things that go with filth, such as drink, overwork, bad air, had to be considered. The Jewish race has a relative immunity. A dark-haired race is prone to the disease and hard to cure. The dark-haired race of Jewish origin, however, have a relative immunity.

Editorials.

THE GENERAL HOSPITAL

His Excellency the Governor-General laid the corner-stone of the New General Hospital in Toronto, April 11th. Mr. J. W. Flavelle, Chairman of the Board of Governors, had charge of the very interesting and impressive ceremony. In his opening address he said that, on behalf of the Board of Governors and others interested in the Institution, he had much pleasure in thanking the Ontario Government, the city of Toronto, the University of Toronto, many public-spirited citizens and the members of the press for the help which had been so freely given towards the great undertaking. The land for the site contained a little more than 10 acres. There were under construction \$1,400,000 worth of buildings, and the trustees expected soon to contract for more buildings which would bring the expenditure up to \$2,000,000. The site cost \$600,000. The total expenditure therefore would be \$2,600,000. Up to the present time they had received from the city of Toronto \$400,000, from the University of Toronto \$600,000, and from private citizens \$1,000,000. It will be necessary for the trustees to ask the citizens of Toronto to give a further \$600,000.

President Falconer said that the happy condition of things was due to the large-hearted generosity of the city of Toronto and the far-sighted vision of the men who controlled the Hospital. It was due in a measure also to the fact that in the last generation medical science had advanced wonderfully, and had

come to the aid of the humanitarian spirit of our time. Men of business capacity and feeling had been giving all their thought to this undertaking, and professors of the University had followed with the greatest care the details of the building. An especially pleasant feature was the way the public-spirited citizens and men of action had co-operated with the University, showing how science was the hand maiden of all that is best for the uplift of our people.

His Worship Mayor Geary said that the chief significance of the situation lay in the fact that Toronto was to-day taking a foremost place among the progressive cities of the world, development was more rapid along scientific lines. This day marked an important step in advance for the University of Toronto. There would no longer be the necessity for medical graduates of Toronto to go abroad to complete their clinical studies or to do research work.

The Premier, Sir James Whitney said he was glad to welcome an opportunity of coming there and bidding God-speed to the promoters of this great work.

His Honor Lieut.-Governor Gibson said the rescuing of 10 acres from this part of the historic ward and the changing of the area to the purposes of such an institution was the cause for congratulation. One was easily satisfied that the future of this institution was assured. The business men on the Board led by the able Chairman would assure success to any movement. It must be a source of great satisfaction to their old friend, Mr. Blaikie, who had spent his lifetime in the service of that institution to be sitting there and watching these proceedings.

Rev. Dr. Carman then read the 23rd Psalm and Bishop Sweeny led in prayer, and offered a special

petition for the work of the hospital and for the safety of the workmen engaged in its erection.

His Excellency when called upon to lay the corner-stone said that among the many privileges attending his Governor-Generalship, he should always consider that the laying of this stone was one of the greatest. He paid a tribute to Mr. Flavelle and praised the initial gift of Mr. Cawthra Mulock, who blazed the way with \$100,000. He also praised Mr. J. C. Eaton for the \$300,000 memorial to his father.

He concluded his short address with a timely illustration from the words of a caddie who remarked on one occasion, "I help every one all I can." For almost one hundred years the General Hospital had been practising that motto.

JUDGE RIDDELL AND THE LONDON LANCET ON EXPERT TESTIMONY

The *London Lancet*, in a lengthy article on the subject of the "Medical Witness," in its issue of March 11th, makes some extended and complimentary references to the Hon. Mr. Justice Riddell's remarks on "Expert Testimony" in his address on "The Medical Man as a Witness" before the Academy of Medicine, Toronto, and published in the *CANADIAN PRACTITIONER AND REVIEW*, January, 1911.

The *Lancet* makes note of the fact that the learned Judge refers to the appointing of medical men to make reports to the Court in certain criminal cases, especially in Ontario, as to suspected insanity of those accused. Such experts are not advocates. They are asked to examine and determine the exact fact and are at the disposal of the defendants as well

as of the prosecution. In such a case, however, neither party is bound to accept as conclusive the evidence offered by these experts. Mr. Justice Riddell considers it a most dangerous practice to hold any person bound by the opinion of any expert, however able and honest. Medicine is an advancing science, and the official expert may fall behind the younger and non-official authority. A litigant should be at liberty to contest the opinion of an expert in a science which is living and growing, and it must be that other than official experts may be called. This, if we accept this view, is fatal to any idea of an official individual or collective being appointed as a standing referee upon scientific questions to the exclusion of evidence to be adduced by the parties. Mr. Justice Riddell's "view, moreover, is a perfectly just one," and covers the position so far as the question of including medical evidence adduced by the parties is concerned.

The *Lancet* goes on to say that the possible introduction of a medical assessor to advise the Court where a conflict of medical evidence is expected is another matter. Presumably if such a state of things were to be brought about the medical assessor and the Judge would determine medical questions without the aid of a jury so far as those issues were concerned, and such a system would be far more satisfactory than the present one.

The *Lancet* thinks the assessor should advise the Court and not decide the point at issue, because it is best that the decision should in form be that of the tribunal charged with the responsibility of the whole trial. Before, however, such a system of assessorship can command the confidence of the medical profes-

sion care must be taken to render the position occupied by the assessor unassailable. He must be a man whose professional qualifications for his post are beyond question selected on account of his fitness to discharge his duties; a fitness which will not depend only upon the possession of scientific knowledge. In these circumstances the remuneration and dignity of position offered will have to be such as will tempt the best men to leave the profession in which they are distinguishing themselves, just as the emoluments and position of a Judgeship induce the barrister to give up his practice and to accept a judicial appointment.

The Eleventh Annual Meeting of the Canadian Association for the Prevention of Tuberculosis will be held in the Hygienic Institute, London, Ont. (on Victoria Hospital grounds), Wednesday, Thursday and Friday, May 17, 18 and 19, 1911, beginning on Wednesday at 2 p.m. Evening meetings will be held in the Y.M.C.A. Auditorium.

PROVISIONAL PROGRAMME.

Wednesday, May 17th.

Hygienic Institute.

2 p.m.—Reports from Secretary and Treasurer.
Reports from Affiliated Societies. Appointment of special committees.

8 p.m.—Y.M.C.A. Auditorium. Address of Welcome, Mayor Beattie. President's Address, J. Geo. Adami, M.D., F.R.S. Address: "The Present Outlook in the Campaign Against Tuberculosis," Dr. Livingston Farrand, of New York.

Thursday, 18th.

Hygienic Institute.

10 a.m.—“Tuberculosis Among Children,” Dr. J. H. Holbrook. “The Tuberculosis Clinic,” Dr. Harold Parsons. General Discussion led by Dr. J. H. Elliott.

2 p.m.—“Sanatorium Treatment,” Dr. C. D. Parfitt. “Women’s Work Against Tuberculosis,” Mrs. P. D. Crerar.

8 p.m.—Y.M.C.A. Auditorium. Address: “Relation of Bovine Tuberculosis to Public Health.” Dr. E. C. Shroeder, of Washington, D.C. Addresses: Hon. Sydney Fisher, Minister of Agriculture. Hon. Adam Beck.

Friday, 19th.

Hygienic Institute.

10 a.m.—Municipal Sanatoria, Dr. J. W. McCullough, Chief Health Officer of Ontario. Business and Election of Officers. “Prevention and Treatment of Tuberculosis in Rural Municipalities,” Dr. Wm. C. White, Pittsburg.

3 p.m.—Reception at the Queen Alexandra Sanatorium.

REDUCED RATES TO DELEGATES.

All persons attending the Annual Meeting are urgently requested to purchase single fare tickets to London, and to secure standard certificates, properly filled in by their local ticket agents.

When a through ticket cannot be secured, a single fare ticket and standard certificate should be secured at each junction point.

This is especially requested of persons coming a

short distance; for if 50 or more certificates are presented the return ticket is issued at one-third the single fare; and if 300 or more are presented it is issued free of charge.

Tickets for the going journey will be issued May 13th to 19th inclusive, and properly validated certificates will be honored for tickets for the return journey up to and including May 24, 1911.

Members are requested to put their tickets or certificates in envelopes with their names clearly written thereon and hand them to the Secretary at the desk early on Wednesday morning in order to have them properly vised. Fee for vising, 25c. each.

ROYAL HONORS FOR DR. LOUIS WICKHAM

His Majesty the King has bestowed the fourth class of the Royal Victorian Order upon Dr. Louis Wickham, of Paris, in recognition of the service he has rendered to the promoters of the new Radium Institute in London, and for the advancement of scientific research. The presentation was made at a private visit of the King and Queen to the new buildings of the Institute. Their Majesties were received by Sir Frederick Treves, Dr. Wickham, Lord Iveagh and Sir Ernest Cassel. They expressed great interest in the arrangements, particularly in the research laboratories, which are expected to be among the most complete in the world.

It will be remembered that Dr. Wickham visited Canada and the United States last autumn, addressing medical gatherings at Montreal, Toronto, Chicago, New York, and other points.

THE T. G. H. EX-HOUSE STAFF ASSOCIATION

The members of the T. G. H. Ex-House Staff held their Annual Meeting in Toronto, Tuesday, April 11th. On the evening of that day about 60 members, together with Dr. C. O'Reilly, met at a banquet in the Albany Club.

Dr. C. D. Parfitt, of Gravenhurst, delivered an address on "Our Present Attitude Towards Tuberculosis." The Hospital gold-headed cane, which is entrusted each year to the member who has accomplished the best piece of original research work during the period, was surrendered by Dr. T. S. Cullen, of Baltimore, the late holder, and presented to the winner, Dr. A. H. Caulfield, by Dr. J. F. W. Ross on behalf of the trustees.

The retiring President, Dr. G. B. Smith, of Toronto, occupied the chair, and new officers were elected as follows: President, Dr. R. W. Hillary, Aurora; Vice-President, Dr. John N. E. Brown; Secretary, Dr. Harold Parsons, and Treasurer, Dr. N. J. Yellowlees, all of Toronto.

Notes

CANADIAN MEDICAL ASSOCIATION

The next meeting of the Canadian Medical Association will be held in Montreal, June 7th, 8th, and 9th, under the Presidency of Dr. George E. Armstrong.

ONTARIO MEDICAL ASSOCIATION

As previously announced, the next meeting of the Ontario Medical Association will be held in the Clifton Hotel, Niagara Falls, May 30th, 31st, and June 1st. The physicians of the "Niagara District," the President, Dr. Casgrain, of Windsor, and many others in various parts of the Province, have worked admirably in the interest of the Association, and we have every reason to believe that the meeting will be *good* in every sense of the word.

The Forty-second Annual Meeting of the American Medical Editors' Association will be held at the Alexandria Hotel, Los Angeles, Cal., June 26th and 27th, under the presidency of Dr. J. MacDonald, Jr.

Unusual efforts are being made for this annual convention, and members are urgently solicited to be present. Plans already matured enable the Executive Committee to assure those who will attend a most interesting session both from a literary as well as a social viewpoint.

ITEMS

It was reported April 14th that it was almost certain that Dr. A. E. Garrow would be appointed Surgeon-in-Chief of the Royal Victoria Hospital, Montreal, in the place of Dr. James Bell, deceased.

We learn from the *Montreal Star* that Dr. Garrow, in speaking about the death of Dr. Bell, expressed the opinion that Canada had lost one of her best-known and most renowned surgeons, McGill one of her best teachers, and the Royal Victoria Hospital her chief surgeon. In speaking of the surgical staff of the latter institution, he said it was difficult to realize the greatness of their loss, so sudden had been their bereavement. They would especially miss his valued advice, general support and sympathetic encouragement in times of difficulty and perplexity.

In the same connection, it may be added that it is generally supposed by Dr. Bell's associates that his death after so short an illness was due to the fact that for a long time past he had so devoted himself to his work that his constitution had become weakened. In short, his devotion to the task of saving the lives of others had left him no resources for defending his own life.

The programme of the Ontario Medical Association has come to hand just as we go to press. We are pleased to note that the officers have arranged for a meeting that promises to eclipse all previous efforts. Not only is the programme excellent in every detail, but abundant entertainment has been supplied for the physicians and their wives.

Among the special papers are the Address in Medicine, by T. B. Fletcher, associate professor of medicine, Johns Hopkins; Surgical Diseases of the Umbilicus, by Thos. Cullen, associate professor, Johns Hopkins; The Relation of Laboratory Work to Medicine, by Norman M. Harris, professor of bacteriology, University of Chicago; and the Phylogenetic Association in Relation to Graves' Disease, by Geo. W. Crile, Cleveland. Besides these excellent papers are many by practitioners from all parts of Ontario. Already the accommodation at Niagara Falls is being engaged, and physicians who intend to go should make their arrangements at once. The days of the meeting are May 30th, 31st and June 1st. A complete programme will be mailed to every physician resident in Ontario, about May 10th.

BANQUET TO DR. BROWN

A very delightful banquet was tendered to Dr. J. N. E. Brown by doctors of the Medical Staff of the Toronto General Hospital on the occasion of his retiring from the Superintendency of that institution.

Among those present were: Doctors Temple, Reeve, Cameron, Adam Wright, Allen Baines, James F. W. Ross, George Bingham, F. LeM. Grasett, McPhedran, Primrose, Rudolf, W. P. Caven, H. A. Bruce, Graham Chambers, K. C. McIlwraith, Fotheringham, Thistle, Myers, S. Johnston, A. A. Gordon, Trow, C. Starr, F. N. G. Starr, Marlowe, McLennan, Malloch, Parsons, Goldie, Jos. Graham, O. R. Mabee, G. Boyd, K. Smith, T. B. Richardson, G. W. Ross, Colin Campbell, Goldsmith, Kinnear, Howland, Hendry, Burson, Lowry, McMillan, Strathy, A. Beatty, W. Jones, J. A. Roberts, Gallie, Shenstone, Hendrick, John Macklem, Arthur Wright, Robertson.

Dr. George Bingham acted as Chairman. When he arose to introduce the chief business of the evening he was received with loud applause. During the remainder of the evening the general assembly exhibited an enthusiasm which cannot be described, and which can hardly have been surpassed. There was a general feeling of kindly good-will manifested towards Dr. Brown, which, although magnificent, was nothing more than that gentleman deserved.

Dr. Wishart, on being called upon, read the following address:

To John N. E. Brown, Superintendent, Toronto General Hospital:

DEAR SIR,—The occasion of your departure from the Toronto General Hospital, where you have for the past six years so successfully filled the office of General Superintendent, is one which your colleagues, the members of the Medical Staff, desire to take advantage of by uniting to testify to the sound character of the work performed.

You succeeded to the post of Superintendent at a time when

circumstances combined to render it a matter of great difficulty to discharge the duties thereto attached; the Staff was in process of reorganization, the sympathies of many of the general public had become alienated, and the task of a complete remodelling of the institution very largely devolved upon your shoulders.

You brought to your assistance in this emergency a considerable knowledge of affairs and a marked business ability, gained by years of private medical practice, followed by the training derived from residence in the Yukon during the days of its maddest rush for gold, in the capacity of Territorial Secretary to the Government of that District, and thus equipped you set about your task.

That you have succeeded, we are here to-night to bear witness, and you may go forth with the assurance of the Staff that a wonderful degree of harmony in the working of the whole complicated machinery of the hospital has been effected under your management. No member of the Staff has ever required to cross words with you, and it is well known that never in the history of the hospital has it been less difficult to induce private patients to enter our wards, while the constant and insistent demand for accommodation which exists is the best evidence that the public have learned to look upon the General Hospital as a valued friend, and to these ends your tactful dealing has largely contributed.

We have to commend you specially for faithfulness in the discharge of duty, for constancy to your post early and late, for a never-varying courtesy, sympathy and good temper in dealing with the difficult and heterogeneous situations which occur daily in hospital management or in connection with the often unreasonable but yet pardonable demands of patients or their friends, and withal for a self-obliteration which has been an outstanding feature of your every act.

In addition to what may be termed the qualities of your internal management, you have added not a little to the prestige of the hospital abroad by your mastery of the technique of hospital administration and by your publications thereon, as well as by the leading part you have taken in organizing the

Canadian Hospital Association of Superintendents. You are now about to still further enlarge that knowledge by a study of the Continental hospitals, and we predict for you the gathering of further laurels in this valuable line of work.

In bidding you adieu we unite in expressing the hope that the same success which is manifest in the work you are just relinquishing with us may attend your future labors, ensuring you many years of continued usefulness, to which we trust may be added to you and to Mrs. Brown the fullest measure of health and happiness.

Toronto, April 8th, 1911.

Dr. R. A. Reeve, on behalf of the donors, then presented Dr. Brown with a beautiful silver salver, and spoke in a very kindly manner of Dr. Brown's sterling qualities and the splendid work he had done as Superintendent of the Hospital. Several complimentary and kindly speeches were also delivered by Drs. Bruce, Cameron, Temple, Grasett, Adam Wright, Baines and J. F. W. Ross.

In reply to the address and presentation, Dr. Brown spoke as follows:

GENTLEMEN:

I scarcely know how to thank you for this honor in tendering me such a sumptuous banquet, so adulatory an address, and so beautiful a gift.

What I have done to deserve them I do not know.

You have made me very happy and proud. Happy because of this expression of your confidence and approval; and proud, because I am a humble member of a profession of gentlemen of such keen sensibilities, so kindly in thought and deed, and so appreciative of work done in the interests of humanity. Truly, Stevenson was right when he said that the medical profession is the flower of our civilization.

I may be pardoned for saying this, because, for the past few years, I have not been in active practice, and, as a consequence, have been able to look upon your work somewhat as an outsider, yet as one having a knowledge of the game. And you know that

an onlooker who knows the game often appreciates the points better than the players themselves.

During the last twelve years I have had the privilege of becoming acquainted with many thousands of people of all sorts and classes under varied circumstances. None have won my admiration and respect more than the members of our profession.

As Superintendent of the Toronto General Hospital, I have always found you ready to give of your time and energies unstintingly for the welfare of the patients under your care.

I have never needed to "cross words with you," because you have been instant in season and out of season. So that the success which you generously attribute to my administration is really largely due to your faithfulness.

I have been the Tom Sawyer who looked on while you have been whitewashing the fence.

In reverting to my work during the past six years, my object has been to see that the patients have been made as comfortable as was possible in an old and out-of-date building; to see, also, that they have been kindly treated and given the best attention. In how far this has been accomplished no one knows quite so well as yourselves.

It has also been my endeavor to give support to every movement the object of which was the scientific study and treatment of disease, and the advancement of the medical knowledge.

As to the non-professional side of the work, the difficulties of administration have been many, and one of the chief of these has been to provide an efficient service, and at the same time to keep down expenses. And here I must express my most grateful appreciation of the splendid support I have received from my working staff, both of the present and of the past, in spite of the fact that they have often been overworked and underpaid.

Yet the office has its attraction in its many-sided nature—the outreach into problems not only professional and humane, but into those also strictly commercial and economic. In fact there are few departments of the world's work that do not have a branch in the office of the administrator of a large general hospital.

But I must not trespass on your time with a rehearsal of the past.

Gentlemen, I echo the words of your delightful address: Our relations have been of the most harmonious character, and it was with sincere regret that I felt compelled to take the step which severed them.

And now, though I am free, and the wanderlust possesses me, yet I feel that there is a cord binding me strongly to you, my brothers of the profession; and I shall be well content if destiny brings me back among you to co-operate with you in the further service of humanity.

Mrs. Brown joins me in saying, "God bless you all."

We are pleased to add that the Governors of the Hospital did a very graceful and worthy act in presenting to Dr. Brown a cheque for \$1,000 in addition to his salary in full as a token of their appreciation of his work for the last six years.

Personals

Dr. George H. Field, of Cobourg, Ont., paid a recent visit to the West Indies.

Dr. George MacDonagh, of Toronto, returned from the Barbadoes, April 15th, and resumed practice April 17th.

Dr. Donald McGillivray is moving about the 1st of May from College Street to the corner of Avenue Road and Elgin Avenue.

Dr. M. R. Alcock, formerly lecturer in physiology in the St. Mary's Hospital Medical School, has been appointed Professor of Physiology, McGill University.

Dr. D. Buchanan, of Galt, graduate of Toronto, 1896, was married on April 27th to Miss M. Josephine Lundy, of Sharon. Miss Lundy was a graduate of the Toronto General Hospital, class 1903.

Dr. J. G. Fitzgerald, Lecturer in Bacteriology, University of Toronto, has resigned to accept the position of Assistant Professor of Bacteriology in the University of California. Dr. Fitzgerald will spend the coming summer in Germany.

Book Reviews

Modern Treatment. The Management of Disease with Medicinal and Non-Medicinal Remedies. In contributions by American and Foreign Authorities. Edited by HOBART AMORY HARE, M.D., Professor of Therapeutics and Materia Medica, Jefferson Medical College, Philadelphia; Physician to the Jefferson College Hospital. Assisted by H. R. M. LANDIS, M.D., Director of the Clinical Department of the Phipps Institute (University of Pennsylvania); Visiting Physician to the White Haven Sanatorium. In two volumes. Volume II. Illustrated. Philadelphia and New York: Lea & Febiger.

The second volume of this system of treatment quite comes up to what one was led to expect from a perusal of Volume I. While the first volume dealt with generalities, the second takes up the diseases by systems, and, unlike the ordinary work on medical treatment, contains sections on Medical Gynæcology, Dermatology, Ophthalmology and Otology.

Where so many excellent monographs are collected it is hard to specify one more than the other, but perhaps we may be permitted to make special mention of James Mackenzie's section on the Heart; that on Diseases of the Blood, by J. C. DaCosta, Jr., and Prof. Beebe's article on Diseases of the Thyroid Gland. Syphilis is discussed by Dr. Gottheil, who, even at the time of writing (October, 1910), was not very optimistic as to the results obtained from "606." Subsequent reports would doubtless strengthen him in his opinions.

The two volumes make up a system which gives a broad presentation of modern therapeutics, and should be welcomed by the profession.

The Mental Symptoms of Brain Disease. An aid to the Surgical treatment of insanity, due to injury, hæmorrhage, tumors and other circumscribed lesions of the brain. By BERNARD HOLLANDER, M.D., with preface by DR. JUL. MOREL, late Belgian State Commissioner in Lunacy. New York: Rebman Company, 1123 Broadway.

By accumulating a large number of cases on this theme, the author has given us a vast amount of very useful information, of great utility to all medical men who come in contact with brain conditions. Many of the histories he cites show the folly of our

modern medico-legal machinery, where a man may be sentenced to imprisonment, or worse, when a careful examination would have shown that the poor fellow was insane. The whole subject-matter is of the utmost importance to anyone practising medicine.

The Modern Treatment of Alcoholism and Drug Narcotism. By C. A. McBRIDE, M.D., L.R.C.P. & S. (Edin.). New York: Rebman Company, 1123 Broadway.

Written for both the profession and the laity, this volume is the result of Dr. McBride's thirty years' experience, and one feels that his conclusions in regard to his treatment are justified. From previous papers in the medical journals, medical men are familiar with the atropine and strychnine treatment which the author found so successful. But Dr. McBride is very careful to mention the fact that the moral influence of the physician is of the utmost importance. This is almost the only book in English on this subject.

Correspondence

Dr. R. H. Robinson, 163 Wilton Avenue, Toronto, has had an intimate knowledge of the Toronto General Hospital since the year he commenced to study medicine—1870. During his student days he was also house surgeon for one year. Dr. Robinson is fully convinced that Dr. J. N. E. Brown was exceedingly well qualified for the position of Superintendent, and has written an open letter to the Board of Trustees, urging its members to offer Dr. Brown something like a decent salary, say \$5,000, and request him to again occupy the position when he returns from Europe next August.

GENTLEMEN,—After going in and out for the past forty years, since I was house surgeon to the General Hospital in 1870 and '71, and still sending and attending patients there from time to time, I have thought a word from me regarding a successor to Dr. J. N. E. Brown may not be out of place, if Dr. Brown cannot be induced by a proper remuneration of his services to remain. And let me say here, there are but few medical gentlemen whose personality would make them more acceptable to the profession and the public than Dr. Brown's. I have watched all these years the executive ability of Dr. Charles O'Reilly and Miss Sniveley, and now for some years Dr. J. N. E. Brown, and I would regard it as a reflection on the wisdom of the trustee board to place an unsophisticated layman in Dr. Brown's place, whose untrained mind in medical knowledge would at once cause a strike on the part of the profession and subjugate the hitherto high standing of the General Hospital to humiliation in the eyes of the profession and before the general public. "Business is business," and a man may be a judge of a good cup of tea or a good beefsteak, but when it comes to the supervision of the sick these minor details are unworthy of recognition. What is wanted is a bright, smiling, hopeful face, with a cordial shake of the hand when a doctor brings his patient in, with the knowledge of the requirements of the case, where to be placed for the most hopeful advantages. These, with all other qualifications, Dr. Brown has abundantly exemplified, and I look upon it as a humiliation to the profession at large that over at the City Hall a police inspector is drawing about the same salary. There are hogs and hogs, but in the science of caring for the sick the laborer is worthy of his hire, and grave responsibility at all times rests on his shoulders. Give Dr. Brown three months' holidays and raise his stipend to \$5,000 a year, and get

him a house big enough to turn round in, and let us still have the pleasure of that "smile that won't come off" around the General Hospital. There is a mighty uplift in it.

Yours respectfully.

R. H. ROBINSON.

THE SELECTION OF A SUPERINTENDENT FOR THE TORONTO GENERAL HOSPITAL

DEAR EDITOR:

Although not an easy or desirable position to fill and to hold, still, as there are nearly 4,000 registered practitioners in Ontario, surely one of them could be found capable to manage the Toronto General Hospital, and who would be acceptable to the Medical Staff of the hospital and the medical men of the city, and have the confidence of the Visiting Staff, the House Staff, the patients, the employees and the subscribers, as well as the ratepayers of Toronto and the Province of Ontario.

The Ontario Government has not seen fit as yet to appoint a layman as head of any of the hospitals for the insane, and surely a medical man, and one approved by the 500 doctors in the City of Toronto, could be persuaded to accept the very responsible and rather unenviable position now made vacant by the resignation of Dr. J. N. E. Brown, who has filled the position so ably since 1905, and under great difficulties.

It is stated that the medical men of Toronto are a unit in desiring that a medical man be appointed Superintendent, and not a layman.

Yours,

PHYSICIAN.

Obituary

JAMES BELL, M.D.

The profession of this part of Ontario were much surprised to hear, April 12th, that Dr. James Bell, of Montreal, had died at the Royal Victoria Hospital of that city on the previous day. Dr. Bell was born in North Gower, Carleton Co., Ontario, Oct. 10, 1852. His illness was short, and the cause of death was pneumonia.

He graduated from McGill University, winning the Holmes Gold Medal. Dr. Bell was recognized for many years as one of the leading surgeons of Canada. He was very active in supporting the Canadian Medical Association for a number of years. He was well-known, highly respected and much beloved by members of the profession in all sections of our big Dominion.

WILLIAM INGLIS BRADLEY, B.A., M.D.

Dr. Bradley, one of Ottawa's best-known physicians, died at Montreal, March 22nd. He graduated B.A. from the University of Toronto in 1884, and M.D. from McGill University in 1888.

After practising for many years in the City of Ottawa, he somewhat suddenly broke down last fall, and went to Montreal for rest and treatment. He continued in poor health up to the time of his death.

WILLIAM WARREN POTTER, M.D.

Dr. W. W. Potter, one of Buffalo's most distinguished physicians, died at his home in that city, March 14th. Dr. Potter was a many-sided man. He was for a time an admirable physician, and then for many years a skilled gynecologist. During his whole professional career he was very active in his work in connection with medical associations, but especially with the American Association of Obstetrics and Gynecologists, of which

he was the chief organizer and secretary for over 22 years, that is, up to the time of his death.

He also took a great interest in educational matters, and was President of the Board of Medical Examiners of the State of New York for 14 years. One of the most important works of his life was that connected with the *Buffalo Medical Journal*, of which he became editor and proprietor in 1888.

We need not speak at present respecting his hosts of friends in the United States, but we should like to say a word on behalf of his many friends in Canada. We who had the privilege of knowing Dr. Potter admired him because of his great ability, and liked him because of his charming personality.

We feel that through Dr. Potter's death we have lost a true, staunch and much-loved friend.

W. N. WICKWIRE, M.D.

Dr. Wickwire, one of the best-known physicians in the Maritime Provinces, died March 31st, aged 72. He was for 25 years Chief Medical Officer of the Port of Halifax, and retired from that position about 10 years ago.

T. D. ROSS, M.D.

Dr. T. D. Ross, of Moncton, N.B., and very well known there, died suddenly March 31st, 72 years of age.

CHARLES MORE STEWART, M.D., M.R.C.S. (Eng.) L.R.C.P. (Lond.)

No words can describe the feelings of Dr. Stewart's friends when they learned that a terrible accident had caused his death on the afternoon of March 25th. While enjoying a horse-back ride with some friends, his horse became unmanageable and dashed against a trolley car. As a result he was thrown in front of the car, and instantly killed.

Dr. Stewart received his medical education in Trinity Medical College, Toronto, and graduated M.D. in 1897. After spending a year on the House Staff of the Toronto General Hospital, he went to Edinburgh and London, and in a few months received the "double qualification" in the latter city. He returned to Canada in 1900, and was for a short time Superintendent of the General Hospital in Ottawa. He then returned to England, and took a thorough and extended course in Diseases of the Ear, Nose and Throat.

He commenced the practice of his specialty in Toronto a little more than three years ago, and very soon reached the front rank. His sterling worth, his wide knowledge in his specialty, and his expert skill at the work thereof, were almost at once recognized and appreciated by both the profession and the public. He was thirty-eight years, and unmarried. He was born in Ailsa Craig, Ontario, where his parents and three brothers reside. His brothers, accompanied by Dr. Gibb Wishart, of Toronto, took the remains to Ailsa Craig for burial, Wednesday, March 31st.

ALEXANDER BETHUNE, M.D.

Dr. Bethune, for many years a general practitioner in Wingham, Ont., died at Emo, April 8th, aged 77. He graduated M.D. from Queen's University, Kingston, in 1858. He was a member of the Ontario Medical Council from 1869 to 1880. For many years during his active life he was recognized as one of the most prominent physicians in Western Ontario.

ELIZABETH MABEL HENDERSON, M.D.

Dr. Mabel Henderson, a practitioner in Hamilton from 1892 to the time of her last illness, died suddenly March 26.

Selections

Gastric Ulcer

The modern medical treatment of gastric ulcer has resolved itself largely into a question of diet. Formerly milk was relied upon as the chief means of sustenance, being considered the most easily digested and therefore ensuring the greatest amount of rest to the stomach. More recently, however, diets consisting of eggs and fat in the form of cream, butter, or olive oil, have been advocated by preference, and definite lines have been laid down by different authors as to the manner and quantity in which these aliments should be given, and accordingly we have the diet of Lenhartz, the diet of Leube, etc. The diet of Yarovitzky has now to be added to the list. Professor Yarovitzky, of Youriev, feeds his patients suffering from gastric ulcer entirely on the whites of eggs and olive oil. He considers milk or cream too heavy, and gives the preference to white of egg because it has been shown to pass rapidly from the stomach to the intestine. Fat inhibits the secretion of gastric juice, and by opening the pylorus freely allows the bile and pancreatic juice to flow back into the stomach and neutralize the stomach contents. All this has been argued before, but the present author lays stress on the point of giving the eggs and oil at separate times, so as not to interfere with the digestion of the egg albumin by the oil. A further point in the treatment consists in the prohibition of water by the mouth, as it excites gastric secretion. Fluid is supplied by means of rectal injections. For the same reason all forms of beef-tea, decoctions of gelatine, etc., are to be avoided. The details of treatment are as follows: In the case of a patient with gastric ulcer, attended with hæmorrhage, on the first day the white of an egg is given in the morning and 20 grammes of olive oil in the evening, and two or three rectal nutrient enemata during the day, or in severe cases nothing may be given by the mouth for the first two or three days. Afterwards the number of eggs is increased daily up to eight, and the olive oil by 20 grammes a day up to 120 or 140 grammes a day. As soon as the patient is taking several eggs a day the nutrient enemata are replaced by injections of sugar in water (10 grammes to 300 c.c. of water). The author admits that some patients are unable to take such large quantities of oil. In these cases he administers it by a tube.—*The Hospital*.

The Profession of Medicine and a Business Career

The question has often been asked why physicians are unable to follow other lines of business, so-called side-lines, and be a success in these, and yet suffer no diminution in their ability to diagnose and treat disease conditions. Surprise has been expressed that medical men cannot successfully enter business, and still continue the practice of their profession on the same high plane as before. The general result of attempting to follow profitable "side-lines" has been, with few exceptions, such signal failure that the surprise of the public is perhaps pardonable. Business men take positions in the board of directors of large and influential corporations, they often own two or three flourishing business concerns, each of which, with competent assistance, is managed easily. But the medical man who strays outside the fold of his exacting profession to increase his income or find a vent for superfluous energy in a business venture usually fails. The cause, after all, is obvious. As the editor of the *Medical World* reminds his readers, the successful physician must *think* in medicine. He must be permeated with medical thought, his ideas must have a medical tinge or flavor, he must in a sense live in medicine, breathe in a medical atmosphere, his every action must be governed by the jealous mistress to whom he has consecrated his career. Medicine exacts the most complete submission. She will have no other goddess to share her place. She consents grudgingly to incursions in allied fields of endeavor, biology, sociology, the classics, literature; but these must always be secondary to the predominating interest. Dividing the attention due to medicine, and bestowing time and energy on foreign interests invariably brings with it its penalty. Hence, the tendency of successful medical men is to be a trifle narrow. They have but a limited amount of energy, and this is concentrated in one all-absorbing calling. It is to be regretted that man cannot be versatile and be a success in all things. The law of nature forbids it. The young physician entering on his career is given his choice; he may be a successful medical man in all that the term implies, if he will promise to think and act and feel in medicine. He cannot go beyond the narrow limits of his profession; to do so invites disaster to his ambition to excel in medicine.

This explanation will account for the fact that a business career and the profession of medicine cannot be followed successfully by one and the same person. They are as incompatible as an acid and an alkali.—*Lancet-Clinic*.

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Original Communications

DIAGNOSIS OF ENLARGEMENT OF THE PROSTATE*

EDMUND E. KING, M.D.,

Surgeon, St. Michael's Hospital, Toronto.

The diagnosis of enlargement of the prostate itself seems to be by no means difficult, but to estimate the role that the particular degree of enlargement plays towards the chain of symptoms often taxes us to the utmost. It is to try and point out some of the numerous methods of examination and a few of the pitfalls that one may encounter that I will address you to-night.

The enlargement of the gland as a whole is not the most important element, but the enlargement of a portion in the direction that will produce the most inconvenience to the patient. We must see what portion causes the most distressing symptoms, and in what manner. The consistence of the enlarged gland is of utmost import, and it is here where a number of errors are made. The gland has many degrees of hardness, and they bear largely on our prognosis and advice that we give as to operation or other interference.

Prostatic change has gone on to a very considerable extent before symptoms that are important or annoying enough to cause the patient to seek advice arise. Here we are confronted with a very serious element in arriving at the age when enlargement begins. It is seldom that men before the age of 55 consult us about prostatic irritation. Yet we know that in many cases enlargement of the prostate is so slow and gradual that no very serious symptoms ever arise, while in other cases symptoms develop very early in the disease.

Mansell Moullin speaks of three or four separate cases, one

*Read before the Brant County Medical Society.

at the age of 53, who had great dilatation of the prostatic urethra, showing conclusively that the prostatic enlargement must have existed for some years. Another, at the age of 48 had for some years previously been unable to empty the bladder, due to an enormous middle lobe enlargement. So we can see that the age of 55 is not really the age of commencement of the enlargement, but usually the age at which the patient seeks relief.

Hesitation and straining in starting the stream are the first symptoms complained of; then dribbling and decrease in force of the stream. These symptoms are of the earliest and almost always present. They indicate that change has taken place in the wall of the bladder, and indicate further that the next important symptom, residual urine, is or soon will be present. In cases of long standing a leaking at night is an indication that should draw our attention to overflow, which, however, must not be confounded with incontinence, although it is most usually referred to as such. In this condition the amount of unpassed or residual urine has gradually and constantly increased until a point is reached in which the amount is equal to the bladder capacity. That which now flows in from the kidneys is only tolerated for a very short time, and the escape is almost continuous. In true incontinence the bladder will not retain urine and is always empty. Increase in the frequency of micturition begins long before residual urine forms. It probably is first recognized by the patient having to rise much earlier in the morning. He has rested during the night, but the inflamed neck of the bladder will not stand the strain that the healthy bladder mucous membrane did, and he is awakened. Notwithstanding this awakening there is the hesitation and want of force.

It may not be amiss before discussing the pathological changes which take place in the prostate or of the means of diagnosis to look for a few moments to the prostate itself, the prostatic urethra, and so note the structures which are very intimately associated with the gland, as the seminal vesicles, some of which may be a fruitful source of change that takes place in the gland itself. The prostate gland comprises two lateral lobes and a middle portion known as the middle lobe. The gland is complex and made up of glandular and muscular tissue surrounded by a capsule, through which antero-posteriorly the urethra passes and the ejaculatory ducts, which open into the prostatic urethra, passing obliquely through the gland. Its size is about that of a horse chestnut. The apex is toward the anus and the base at the under surface of the bladder. Normally the gland is of firm consistence and weighs about one-half to three-

quarters of an ounce. The portion described as the middle lobe lies beneath the vesical trigone. The capsule is an extension of the visceral layer of the pelvic fascia and is much denser over the posterior and lateral aspects than over the anterior and middle portions. It is from this capsule that the gland is enucleated, and when the operation is done from above practically only the vesical mucous membrane has to be incised. The denser posterior capsule separates the gland from the rectum.

The ejaculatory ducts lead into the vas deferens and this with the seminal vesicles lies on the posterior surface of the gland. Inflammation which passes along the ejaculatory ducts and infects the seminal vesicle must of necessity be more or less a source of enlargement to the gland. The form of enlargement is a congestive or sub-inflammatory nature and occurs in younger men. It is a result of gonorrhœa, and must not be looked upon in the same light as the enlargement of the gland under discussion. I wish, however, to say in passing that I consider this is one of the etiological factors in the enlargement of the aged, and most probably the congestion passes to inflammation, and this on into a hyperplasia, which becomes a chronic condition.

The prostatic pouch is a bulging backward of the mucous membranes and the muscular bladder walls behind or above the trigone, and is due to the straining action of the bladder muscle trying to overcome the increasing obstruction to urinary outflow. It is not always associated with enlarged prostate, but may be an accompaniment of stricture of the urethra. It is, however, in regard to the development in the prostatic cases that we are concerned. This portion, the most dependent, is normally the last to empty, and the muscular wall here the last to take on contraction. When the obstruction is severe and the outlet raised, this portion of the bladder has had to resist the whole pressure of expulsion, and, being the weakest portion of the bladder, surely and gradually gives way little by little until the pouch is formed and the bladder never completely emptied. It is then, the weight of the retained urine and the changed level of the outlet to be overcome after the strained muscle has lost a great deal of its contractability that causes this pouch to increase to enormous size and produce an effect on the whole bladder.

The enlargement of the gland in any of its parts, to a greater or lesser degree, obstructs the bladder outlet. When this obstruction is continued the bladder walls undergo hypertrophic change. The obstruction and straining always cause congestion, and this

congestion makes the obstruction worse. Congestion is a cause of retention and a precursor of inflammation, which is a most important factor in the increased frequency of the act of micturition. The prostate always enlarges upward and laterally, never downward.

The portion of the bladder known as the trigone deserves a word of description because of the great part that area plays in the after bladder symptoms of enlargement of the prostate. The trigone is peculiar in the fact that there is no submucous tissue. The mucous membrane resting on the dense muscular layer of this region, it remains in the same condition when the bladder is full or empty: while the mucous membrane of the bladder in contraction lies in folds and wrinkles, that portion over the trigone is smooth under both conditions. The trigone is marked by a dense band extending from one urethral orifice to the other and forms the base of the triangle, the opening of the urethra forming the apex.

The internal sphincter surrounds the internal opening of the urethra and is made up of muscular fibres derived from those of the deep layer of the muscular sheet of the trigone, while the external sphincter is at the apex of the prostate or triangular ligament, and made up of bundles of striped muscular tissue which surround the urethra. The prostatic urethra lies between these sphincters, traversing the whole gland. The ejaculatory ducts and prostatic ducts open into it on the sides, while on its floor is the verumontanum behind the slit-like opening of the utriculus masculinus or sinus pocularis, which is the fused ends of the Müllerian ducts of the embryo; these in the female being the uterus and vagina, and are regarded as their morphological homologue. This slit is sometimes very much larger and deeper than others, and is a menace to the passing of soft catheters. The prostate is not the homologue of the uterus, and consequently changes that occur in the uterus, as fibroids, are not to be associated in discussion.

Too many men have taught that the prostate and uterus are analogues, that fibroids and prostatic enlargement are similar, and to be met with as sequelæ at the menopause. In the prostate is the utriculus masculinus, a slit depression lined with cylindrical epithelium enclosed by the developing prostate. This is the uterine and vaginal homologue.

The pathological gland, the one under discussion, varies greatly in size, and the severity of the symptoms are not in proportion to the degree of enlargement. Nor are the symptoms to be measured by the degree of enlargement found in rectal exam-

ination, which really only reveals the size and consistence of the lateral lobes. I do not intend to go deeply into the pathological changes, only referring to them in passing. The enlargement of the lateral lobes has much to do with the elongation and tortuosity of the prostatic urethra. One lobe may, and frequently does, enlarge much more than the other, and may contain nodules which project and push the urethra to the side, or they enlarge irregularly, so that the urethral canal becomes tortuous or may have a single bend in it. This causes much distress in the effort of the bladder to overcome the obstruction and a considerable amount of hesitancy in starting the flow of urine. This tortuosity makes catheterization sometimes very difficult.

The middle lobe is the most important portion of the prostate and causes by far the greatest amount of obstruction to the outflow. This portion of the gland enlarges sometimes to an enormous size, much larger than a tangerine orange, as in the specimen I show here, or it may be no larger than a cherry and still produce almost complete obstruction, acting like a ball valve. In these cases the urethra is diverted, and the catheter, especially if it is a silver one, has its beak caught, and only by dexterous manipulation is it made to enter the bladder. The coude catheter will ride over this obstruction or pass to the side of it with much more ease, while the soft rubber instrument will also be held and may not be able to overcome the obstruction.

In the prostate cysts may form. These may be single or multiple, their contents fluid, or they may contain concretions. They often open into the urethra, and when they contain concretions these may be diagnosed by the sound. We have the grating or metallic click, and as this is felt before the sound has entered the bladder, it is possible to make a clear diagnosis. I was able to so diagnose the case of Mr. M., whose prostate was considerably enlarged, and on whom I had done a supra pubic cystotomy for stones some two years previously. After these concretions had been removed, the size of the prostate decreased and the symptoms gradually diminished.

The methods of examination are really few, and the most important and the one easiest to perform is the examination of the rectum. One can gain the most information by the rectal examination, and after a large experience may draw conclusions that will almost surely be corroborated by subsequent events, but this must be done in a very systematic manner, and should be made first while the bladder is full. Here we can probably palpate the bladder, which may be greatly distended and easily made out above the pubes. Then, by bimanual examination, the

tension can be measured and the prostate estimated. Next, we should have the patient urinate to empty the bladder or to pass all the urine possible. Then we may find an entirely different condition of the prostate, which has been brought about by the change of bladder conditions. We should then pass a soft rubber catheter or coudé and measure the residual urine. Here we find a most important clue. The amount of residual urine gives a very accurate impression of the degree of middle lobe enlargement. In thin men with fairly lax abdominal walls, palpation should again be made and bimanual examination may reveal the middle lobe between the rectal finger and the hand on the abdomen. Of course this cannot be secured with men who have large, fat abdominal walls, but the routine is well to follow in all cases. We have also an opportunity of seeing the recently voided urine and can compare it with the catheter specimen of the residual. In the latter we may find much sediment and some debris.

The method of making a rectal examination of the prostate varies with the surgeon, but the method that will give the best result is made with the patient in the knee chest position. The patient is placed on his knees, the body well forward and resting on the elbows and chest; the parts are now more relaxed. The index finger, which has been covered by a finger cap well lubricated with white vaseline, is gradually inserted through the anus. Here we should reach the tip of the prostate gland either in the normal state or enlarged before the finger has been introduced much beyond the first joint. Now, if the gland is enlarged it is quite evident. The method should be to examine the middle of the gland to see if the normal line of depression exists; it is not deep, but well marked. Then carry the finger well in and up and try to reach the top of the gland. This will give you information on two points: the length of the gland and the degree to which it protrudes in the rectum. Some very long glands do not protrude as much as those that are very much shorter. Next, the finger should sweep over the upper border, if it can be reached to one side, say the right, and follow the border to the extreme right side of the gland.

Note the size of that lobe, its unevenness or enlargement, whether it contains nodules or irregularities; if these are of much greater hardness than the whole lobe or not; of the degree of hardness, whether of stony hardness (possibly cancer); of the hard variety or fibroid condition, of the India rubber ball hardness which gives the characteristic impression to the finger tip, or of the soft, even enlargement that is due to congestion. Then the finger should be carried back over the top of the gland and

the same process of examination carried on in the other lobe. We will now be in a position to define the difference in size of each lobe, and it is a well-known fact that the lobes do not enlarge equally.

Take the case of cancer of the prostate; it usually begins in one lobe, may be confined to that lobe throughout its course, or it may involve each lobe or be disseminated throughout the gland. Having made out the size of each lobe and compared them one with the other, you may have a very fair working basis to go on, and many of the symptoms can be explained by this examination, but you may find that the size of the gland is not such as would warrant you in concluding that it would produce enough obstruction to cause all the symptoms present. Then we have to think of the middle lobe. This lobe may be the sole cause of the trouble, and the lateral lobes may not indicate in any way the change that has taken place in that direction.

The rectal examination does not help us much in the diagnosis of middle lobe enlargement. The rectal examination may be most misleading. One may find what appears to be a very large prostate, as in the following case:

Mr. W., aged 72. In 1905 I removed an encysted calculus, which I show here, and he made a very interesting and speedy recovery and resumed his occupation, that of a drover. I saw him at irregular intervals during the year and then lost sight of him. In 1907 he sent me a sample of urine for examination, which showed cystitis, and he complained of some pain in voiding urine and having to rise at night. Urotropin relieved the symptoms, and I heard nothing more from him until July, 1910, when his son telephoned me that his father was very bad, had been so for more than a year, and as his physician had diagnosed enlarged prostate mainly from the age of the patient, he wanted me to take him into the hospital for preliminary treatment for a month to prepare for removal of the gland. I saw him the same day and made a rectal examination. The gland was much enlarged, at least I thought so at the time. It measured over four and a half inches across and was very deep, so much so I could scarcely reach the top. This examination was most painful. I did not feel that I should advise an operation, however, without further examination, and I passed a sound and found a stone in the bladder. I supposed that this was a complication of the prostatic enlargement and a result of residual foul urine. I urged an immediate operation, and judge of my surprise on finding the three stones here shown. The lower two were in the trigone and prostatic urethra and the sole cause of the enlarge-

ment, which I had diagnosed as enlarged prostate. After the removal of the calculi, I made an examination for the prostate within the bladder and found none, and on rectal examination the whole mass had disappeared. He made a speedy recovery from the supra-pubic cystotomy and is to-day first-class.

Mr. X., aged 65, had the usual symptoms of prostatic enlargement, the urine was in a most excellent condition, but the pain was very intense at each act of micturition, which rarely went over an hour, and five or six times during the night. He was in a very run-down state, and on rectal examination the prostate showed a lateral enlargement of about three inches and a half. I did not make any further examination, but advised an operation for its removal. I decided on the supra-pubic route, and on entering the bladder a large stone was found. After removal I proceeded to examine the prostate and found the second stone caught in the prostatic region, and with much difficulty dislodged. Here I found no prostatic enlargement and closed the bladder wound and drained the bladder through a urethral catheter. The patient made an uninterrupted recovery and has had no prostatic symptoms since.

These two cases are unusual, but both are very instructive. The one with the three stones shows the remarkable rapidity with which urinary calculi grow. It was about four and a half years between the first and second operation, and these stones grew in that time. The enlargement found was due to the impacted stones crowded in the prostatic urethra, held down by the large stone above, with the bladder closely contracted on it; in the other case the same condition existed, the stones giving the evidence of enlargement as found by the rectal examination.

These cases also point out a lesson that must strike deep into our minds, else we may fall into an error in diagnosis and prognosis which will have to be explained later to the friends. After having completed the rectal examination, we must weigh the information secured by the catheter.

This opens up the question of any instrumental interference and so far as passing of the catheter for diagnosis is concerned, must be answered in the positive. Much can be learned. The catheter will reveal the length of the prostatic urethra, any change in its calibre or distortion in its course, and the amount of residual urine. Should we use solid or silver catheters, soft rubber or gum elastic? This all depends on the tactile sense of the operator, and for the surgeon who is only occasionally passing these instruments I would positively say the soft rubber catheter. It will not always be possible to pass this instrument, then the gum elastic either with an olivary tip or the coudé.

Solid instruments should be of a full long curve and may have to be much depressed before they will enter the bladder. This gives a fair indication of the size of the middle lobe. I cannot advocate the routine use of the cystoscope. In many, and probably a majority of cases, much information may be secured, but it is excess information and does not weigh heavily for or against the decision on treatment.

The cystoscope is a most useful and valuable instrument, but its use must be restricted to selected cases and not made a routine method of examination. This in some quarters is considered quite heterodox, but I have seen enough serious and dangerous symptoms produced by its use and no real benefit derived from the same that I have no hesitation in saying that it is an instrument which should only be used in cases of enlarged prostate with the utmost gentleness. The patient should be placed under an anæsthetic to make the examination satisfactory, or else the examination causes such an amount of unnecessary pain that grave risks are run and no compensating benefit derived. It is a most useful instrument in so many forms of bladder and kidney disease that the scope of its usefulness is quite wide enough. It is very convenient to have a large size or female cystoscope to examine the bladder through the supra-pubic incision, when most valuable information may be obtained, but then again only in obscure cases.

With these several methods of examination one should be able to determine the size and condition of the enlarged prostate. Having done this, we are face to face with the question of treatment. What shall we do to relieve the symptoms and make life more bearable? This is a very large question and has to be answered in one of two ways: operation, which is always a grave procedure and palliative, which in a great many instances gives only slight relief and conduces the patient to the use of a catheter for the balance of his life. This may not be so serious a condition if we can get him to follow the directions and exercise the utmost care in attending to the instrument and his surroundings. Patients cannot be brought to understand why all this is necessary, but when the bladder becomes infected other means are sought and operation suggested. Time will not permit further discussion of that question to-day.

The case of cancer of the prostate I show you is from a patient 79 years of age, a retired gentleman, who met with a severe accident while driving along a country road. He was injured in the perineum, and, while he had not been entirely free from urinary symptoms, they had never given him enough con-

cern to consult his physician. Almost at once after the accident painful and frequent urinations began, and they continued until I had a consultation with his physician. I found a prostate enlarged to about twice or three times its normal size and containing hard nodules, which I had no doubt were cancer. It appeared to me to be early in the disease, and in the absence of much inflammatory tissue surrounding it, should be easy of removal. His son-in-law was a doctor and urged us to follow the supra-pubic route, and this being very conclusive I operated and was successful in removing the entire gland. He lived in comfort for some months, when metastasis developed, and he died about eight months after the operation. The specimen shows the distribution of the cancer in the gland, and it looks, both macroscopically and microscopically, to be completely removed. However, the result does not bear us out to that conclusion.

61 Queen Street East.

VINCENT'S ANGINA*

BY MURRAY MCFARLANE, M.D.

A special and rather rare form of angina was first reported by Professor Vincent, of Valde Grace, in 1898, who described a clinical and anatomic-pathological condition almost pathognomonic, situated usually unilaterally on the tonsil, or pillar. It resembled nothing reported before except that it might be considered analogous to ulcero-membranous stomatitis in some of its features, and in fact is considered by Louis Lesner to be a localization of this disease on the tonsils.

Vincent described, as always accompanying this form of angina, a fusiform bacillus almost always accompanied by a spirillum with a springlike movement, which is not, however, marked.

A. Athanasui accepted Vincent's conclusions from observations of cases of the angina with bacteriologic control, but draws attention to the fact that, in the membranous stage, it is liable to be confounded with diphtheria and with syphilis in the ulcerative form unless a bacteriological examination is made.

Although this disease is rare it is altogether probable that many cases have been treated and diagnosed as follicular tonsillitis or diphtheria. Statistics of a late date seem to show that it constitutes .5% of all forms of sore throat and 3% of cases of non-diphtheritic angina.

Its power of contagion varies. In some epidemics it seems more virulent than others. L. T. Royster reports two cases illustrating its contagiousness. A dentist treated a patient suffering from ulcerated gums and mouth and referred the case to Royster, who found the bacteriological characteristics of Vincent's angina. In about one week the dentist himself came for a consultation, complaining of a sore throat, which was found to be Vincent's angina.

The disease has been conveyed in various manners by kissing, the use of an infected glass or pipe, while Todd describes the case of a pathologist who contracted the disease while examining throats during an epidemic of the angina in a lunatic asylum.

The clinical appearances of Vincent's angina differ according to the stage of the disease. It is distinguished usually as presenting two forms, a membranous and an ulcerative, but it is

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more than probable that these are two stages of the same affection.

There is first a greyish-white or yellow membrane, with scarlet inflamed border, with an appearance of loss of substance immediately beyond this zone, usually situated upon one tonsil or also involving the pillar. This may extend superficially or may eat deeply into the tissues, giving rise to a punched-out ulcer, honeycombed or funnel-shaped. It may spread to the gums, palate or other tonsil. In some cases a peculiar fœtor of the breath is observed, but this is not constant, and was absent in two of the writer's cases. The pain complained of is not nearly so severe as the clinical appearances would lead one to expect. Considerable cervical adenitis is often present, but is not suppurative; headache, vomiting and general malaise is present in the early stages when the membrane is present. The temperature is striking in the disproportion between what would be expected from the local disturbance, rarely going above one hundred degrees. In five of Rolleston's series of thirty-two cases the temperature was normal, in 10 between 99 and 100, and in only four was it above 102.

The duration of the disease varies, being about two weeks on the average, differing thus from diphtheria, which it so closely resembles in its appearance. Traces of the ulceration have been noted about two months after the onset of the disease, while some cases clear up in about a week when very mild and treated energetically.

Bayer reports a case lasting four months, while Pusatere's case lasted for a year.

Relapses may occur.

The diagnosis depends finally upon a discovery of the pathogenic organisms.

As the membrane clears off the spirilla tend to disappear, leaving the more purulent fusiform organisms.

In the early stages diphtheria must be excluded, and later on the appearances are strongly suggestive of syphilis. Chauffard thinks that Vincent's angina can be excluded if the disease does not yield quickly to the application of powdered methylene blue, or iodine. The prognosis is favorable and complications are seldom troublesome, transient albuminuria is occasionally seen, and more rarely septic conditions, it is said, when stomatitis accompanies the faucial disease a few cases of death are recorded from septic pneumonia.

Various forms of treatment are advised, such as cauterization with chromic acid, chloride of lime, followed by antiseptic gar-

gles: hydrogen peroxide and general antiseptic measures. The writer has found Tr. Iodine with Pot. Iodide in small doses internally give the best results. Diphtheria antitoxin does no harm, but is of doubtful efficacy. Methylene blue is excellent in delayed healing, and attention to the general health must be paid. Arsenic in protracted cases in the form of Donovan's solution has given excellent results. The writer has found Tr. Myrrh with Listerine an excellent gargle and mouth wash in his three cases.

Tobacco should not be used during the disease, and oral sepsis carefully carried out, carious teeth attended and the general hygiene of the mouth looked after, as lack of care in this latter respect has been given as the predisposing cause of the affection as well as youth, the male sex, tobacco, caries of the teeth, syphilis and mercurial stomatitis.

The writer wishes to report to this Academy three cases of the disease occurring in his practice during the past six months:

Case 1.—Mr. S., age 27, journalist, just returned from a trip to England, came to me about the end of September, 1910, complaining of a slight soreness of the throat, which had troubled him for about ten days. Upon examination I found the left tonsil and faucial pillars covered by a thick, yellow, creamy membrane surrounded by a scarlet line, external to which was a moth-eaten appearance, as if there was a loss of substance. The structures in the neighborhood were not in any way swollen nor even reddened; in fact the tonsil looked as if the membrane and the scarlet line were painted on. I was struck by the slight pain complained of in view of the appearance of the parts. There was no odor to the breath, very slight involvement of the glands, and the temperature was only 99, pulse 90, and no feeling of malaise or headache had been experienced at any time. The picture presented was so entirely different to anything I had seen that I did not think it was a case of diphtheria and made a tentative diagnosis of Vincent's angina. Dr. B. O'Reilly examined a swab and found the pathognomonic spirilla and a large fusiform bacillus, thus confirming the diagnosis. Under Pot. Iodide in 3-grain doses internally, Hydrogen Peroxide and Tr. Iodine locally, the patient made a complete recovery in about one week.

Case 2.—The patient in this case, strange to say, was also a newspaper man, Mr. McF., age 32, but had not come into contact with the first patient. He came to consult me in October, two weeks after the first case had been seen. He was an old patient of mine, with chronically enlarged tonsils, which he had previously refused to have removed.

Having found his throat sore, he came to me frightened by the appearance of the left tonsil. Upon examination I found two deep excavations upon the tonsil, which presented the appearance of having been punched out as cleanly as if a tonsil punch had been used. A slight remnant of membrane was on the surface between the ulcers, very little pain was noted, slight glandular involvement, and no general symptoms were complained of. I was at first afraid of tertiary syphilis, but history was negative. I then had a microscopic examination made and Vincent's organisms were found.

Dr. Perry Goldsmith kindly saw this patient for me and agreed with the diagnosis before the microscope was used. The patient recovered in about two weeks. I then removed the tonsils, and one week later noted a return of the ulceration on the anterior pillar, which, however, readily yielded to treatment.

Case 3.—The third and last case I have seen was a young lady, Miss W., in February, 1911, a student of music, age 23. She complained of a very sore throat. I found a large swollen tonsil, which had evidently suppurated, as pus was oozing from several parts of the tonsil and neighboring fauces. She was subject to quinsy. The glands of the neck were very much involved and the tonsil was covered by a slight grayish membrane and was deeply ulcerated in a crescentic manner. The breath was very foul, the temperature 100, pulse 110. This appeared to be a mixed case of peritonsillitis with Vincent's angina added, for the specific organisms were found upon examination, together with various pus organisms. Recovery was uneventful. In conclusion it would look as if Vincent's angina was becoming fairly common from some reason or other. I do not think we have been overlooking cases, as the picture presented by these three differed so entirely from anything I had seen before that I felt I was facing, to me, a new disease.

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THE "SIDE-STEP" IN MEDICINE

JOHN HUNTER, M.B., TORONTO.

This term is often used to convey disapproval. It may signify a swerving from principle or from the truth; shunning obligations, or shirking unpleasant duties. The forward and upward progress in personal, social and national life, is impeded when this term can be applied with any such sinister significance. On the other hand, in the life of the individual, of society, and of the nation, the "side-step" may bring out some of the noblest and most beneficent traits of character. Although it is eternally fixed that there can be no "side-stepping," where principle, truth, or any of the Christian graces are involved, but in methods, opinions, and conduct, what an amount of irritability, strife, hatred, quarrelling, and fierce battles could be avoided by the courteous, sympathetic, tactful, rational, and expedient "side-step."

In medicine, as in any other vocation, the "side-step" may be taken for the malevolent, as well as for the beneficent purpose. The physician may use his knowledge to procure a criminal abortion—one of the most mercenary, cowardly and despicable of crimes; or he may "step aside" from the emoluments and comforts of civilization to succor the lives, and to brighten the morals and minds of the submerged races.

The student who chooses medicine as a vocation, and instead of availing himself of every opportunity of acquiring a liberal education, and of obtaining as thorough and as practical a knowledge as possible, of the arts and sciences on which medical practice is founded, goes out to reach his goal with an intellect barren of literary culture, with a smattering of scientific knowledge, and without practical experience in clinical and laboratory work, is taking a "side-step" that will—unless something fortuitous happen—inflit upon him a very heavy, if not a disqualifying, handicap in the pursuit of his calling.

The young physician who lays aside the true student's desire for more knowledge; or seldom consults his library, and adds nothing to it; allows instruments and outfit to become inadequate and unsuitable; absents himself from clinical, society, and association meetings; and who seeks to win success and distinction by way of patronage from the fraternal society; by favors from the congenial brotherhood of club-life; from exploiting the

church; or by rushing municipal affairs or party issues—takes the “side-step” that only too often ends in professional, as well as in moral, degeneracy. In parenthesis, it may be stated that the evil is not in any of these things, *per se*, but in prostituting them for a selfish purpose.

The “side-step” has as stable and as beneficent a place in medicine as the anodyne and the anæsthetic. The “side-step” that enables a student to spend time in study, and in clinical and laboratory work, that otherwise would be given up to social functions or to amusement—is a very potent factor in acquiring a better intellectual and practical equipment for his vocation. In the young physician’s life the “side-step” that removes him from Cupid’s too-previous darts and from the enticements of the amusements, athletic, civic, or political world, other than for the purpose of needed recreation and diversion, or for the discharge of the duty of citizenship; and that enables him to concentrate his attention, energy, time and money on his professional work, will be of inestimable value in helping him reach the goal of efficiency, fame, and financial success.

The “side-step courteous” as a soother of psychic disturbances—in the parlance of sport—has chloroform, anodynes, or the coal-tar products “beaten to a standstill.” How much more pleasant our daily round would be if the “side-step courteous” was made a more conspicuous feature of our ethical training. The petty grievances and misunderstandings, like the noxious weeds, would speedily die for want of something to exist on. It would perform the function of the pneumatic tire, in carrying us along the pathway of our professional activities.

Akin to the “side-step courteous” is the “side-step expedient.” From training, experience and force of habit, we acquire strong convictions as to what ought to be done and how. Should we concede anything when our convictions seem to rest on such sure foundations, and, perchance, are buttressed by eminent authorities on the subject? We are face to face with convictions held as tenaciously as our own. There is no supreme court to arbitrate, and the necessities of the patient, as well as medical ethics, forbid a deadlock. The “side-step expedient” offers the only rational and honorable solution of the problem. It “clears the deck for action,” assures the patient’s welfare, and preserves medical decorum.

Our years may be divided into “Tender teens, Teachable twenties, Tireless thirties, Fiery forties, Forcible fifties, Serious sixties, Sacred seventies, Aching eighties, Shortening breath, Death.” The “side-steps” incident to the first three of the

above divisions have been alluded to already, and the last four may be left out. There remains then for consideration the question as to what "side-steps" should be taken in the "Fiery forties, Forceful fifties, and Serious sixties." Our obligations should be allowed to adjust themselves normally to each decade of life.

When the medical pilgrim has reached the "Fiery forties" it may reasonably be assumed that he has had some experience in practising the "side-steps courteous and expedient." In what new ones should he become an expert? The "side-step resigned" will help avoid many a gruelling disappointment. Unless the physician be a Bourbon, incapable of either learning or forgetting anything, he ought to know his limitations at forty. In some departments of work, in the interests of the patient as well as for the honor of medicine, he should be willing to take the "side-step" resigned and call to his aid someone better qualified. Every patient is entitled to the best service he is willing and able to pay for. Medical progress is retarded and the practice of medicine made a reproach because many physicians refuse to take the "side-step resigned." In obstetrics, for example, many of the methods in vogue are so slovenly and unaseptic that the patients would be much safer in the care of a midwife, who makes no examination nor interferes in any way with nature's efforts. The physician who is either too ignorant or too indolent to give his obstetric patients the benefit of the modern art and science of obstetrics, ought to take the "side-step resigned." The same law governs in surgery and in all other departments of our work.

The last "side-step" that the brevity of this paper will permit the discussion of is the "side-step upbuilding." This is in many respects the noblest, and perhaps the most difficult to practise of any yet mentioned. The veterans have come up through much labor and tribulation to an assured place in the front ranks of their profession. These can do their work well and fill any position in the gift of their fellows, with both efficiency and honor. Some much younger men come into their midst. These have distinguished themselves at college and in clinical and laboratory work. They have travelled afar, and have sat at the feet of many a medical Gamaliel. What will be the attitude of the veterans towards these young recruits? When the history of some of our hospitals and medical societies comes to be written there will be revealed the cause of many a quarrel on the staff, and for the non-attendance, or indifference of many of the members of the Society, or Academy of Medicine. The

origin of these untoward conditions will be found in "The custom some have of surrounding all the points of vantage with the little circle of those who have "arrived" and shutting all others out. How much better for the veterans to take the "side-step upbuilding" and give these youths a chance "to leap into a reputation and to acquire the experience that will fit them for leadership," when disease, or the disability of advancing years, set aside the stalwarts of to-day? All such "side-stepping," however, is not being sidetracked permanently; not standing still, not sulking, but pushing along the now open way on to the main track again. Yielding! But how splendidly! Following! But how gloriously!"

"Lost beauty, magically new,
Shall spring as surely as the flowers,
When, 'mid the sobbing of the rain
The heart of April beats again."

HOSPITALS FOR INEBRIATES—A COTTAGE HOSPITAL FOR TORONTO

BY DRs. A. M. ROSEBRUGH AND R. H. COLEMAN, TORONTO.

In the judgment of police officials throughout Ontario the present system of committing inebriates to prison for short terms utterly fails to reform the poor unfortunates who come before them.

A man arrested for drunkenness and sent to jail for a short term is discharged with the same appetite for drink and powerless to withstand the temptation, with a result that he is soon re-arrested and re-committed, and so the process goes on until the man has lost all self-respect.

Some five years ago a Society was organized in Toronto called "The Ontario Society for the Reformation of Inebriates." The object of the Society is:

1. To promote the reformation of indigent inebriates in Ontario.

- (a) By making use of the public hospitals of the Province for the purpose, and (b) by combining therewith the Massachusetts Probation System.

2. The second object of the Society is to promote the reformation of inebriates in Toronto as follows:

A Medical Officer and a Probation Officer attend the Police Court and offer medical treatment and a helping hand to inebriate prisoners found desirous of such help. The medical treatment is given by the Medical Officer either in the home, at the office of the physician, or in a ward of one of the public hospitals of the city. The Probation Officer acts the part of a friendly visitor, assists in finding employment when necessary, and helps to a better life.

At the time the work was begun in Toronto it was a comparatively new thing, both on this continent and in England, but within the past five years much has been learned by our own officials through experience gained in treating cases and from information gathered from the United States and Great Britain. The following synopsis of what is being done in other countries will show the trend the scientific treatment is taking where the subject is being scientifically studied.

In Great Britain there are three classes of institutions for the treatment of inebriates, as follows:

1. The "Retreats."
2. The "Certified" Reformatorys, and
3. The "State" Reformatorys.

1. The "Retreats" are private hospitals under government inspection. There are twenty-two of these institutions in England.

2. The "Certified" Reformatorys are established by Counties or Union of Counties, but the expense of maintenance is borne wholly by the Government. They receive cases committed to them by the courts, and they are under Government inspection.

3. The "State" Reformatorys are Government institutions for the segregation of imbecile and unmanageable drunkards, transferred from the "Certified" Reformatorys. On account of the encouragement given by the Government through the "Inebriates" Act of 1898, the number of Certified Reformatorys has increased from three to eleven, and during that period over 3,000 patients have been received from the courts. The twenty-two "Retreats" receive on an average 500 cases a year.

Australia is profiting by the example of Great Britain in the public care of inebriates.

In New South Wales reformatory efforts were commenced by the Government in 1907. Institutions for this purpose have been established in connection with jails.

In Victoria an Institution for Inebriates was founded in 1907. At Lara a mansion has been purchased by the Government for the reformation of inebriates. The land attached covers one square mile.

In New South Wales a portion of Darlington Jail has been set apart for the reception of habitual inebriates on indeterminate sentences.

Germany has no State Hospitals for Inebriates, but private hospitals are assisted by the German Imperial Insurance System. There are about fifty private institutions for inebriates in Germany. They receive aid from local poor commissioners as well as from insurance companies.

Denmark has five private institutions for the reformation of inebriates, and which receive Government aid.

Hungary subsidizes a private inebriate hospital near Budapesth.

Switzerland has eleven "Colonies" for the treatment of alcoholic cases. They receive aid from the Government monopoly in alcohol. Switzerland leads the world in the scientific study of alcoholism, and a large percentage of cures are reported.

United States.—Although there are at present but two State

Hospitals in the United States for the treatment of inebriates, steps are being taken in a number of the States with a view to their establishment.

In Massachusetts a hospital at Foxborough for the medical treatment of inebriates has been in operation for a number of years, and at Knoxville, Iowa, a hospital has been in operation for two or three years.

Two years ago the Legislature of *Minnesota* adopted a bill providing for the establishment of a hospital or reformatory, and at the last session of the *New York* Legislature a bill was adopted authorizing the establishment of a farm colony by the City of New York.

Farm Colonies.—At Cleveland, Ohio, there is a farm colony located on a very extensive tract of land for the reformation of inebriates. There is also a farm colony at *Bridgewater, Massachusetts*, with ample grounds, which is used for the detention, on indeterminate sentences, of vagrants, as well as for the defective and apparently hopeless criminal drunkards.

A NEW DEPARTURE.

Massachusetts is making a new departure in its provision for the care and cure of its inebriates. A second farm colony is being established on a large tract of land, such as will permit of three classes of inebriates, widely separated, receiving distinct and separate care and treatment as follows: (1) A hospital and grounds for men. (2) A hospital and grounds for women. (3) A detention colony for observation and care of inoffensive but seemingly hopeless chronic inebriates.

The late Sir Oliver Mowat, when Prime Minister of Ontario, was strongly impressed with the great need of provision being made for the reformation of drunkards, and he had in mind the establishing of an institution for their reformation at Hamilton, but, much to his regret, as public opinion did not seem to him to be sufficiently ripe to justify the expense at that time, he was obliged to postpone the matter.

In 1891 the Ontario Prison Reform Commission reported very strongly in favor of the establishment of a Reformatory for Inebriates in Ontario, but as there was no public opinion strongly supporting this report, no action was taken in this direction.

In Toronto the Ontario Society for the Reformation of Inebriates has been working as aggressively as the funds in hand will permit. Hospital treatment has been given in the public hospitals, but as they are not properly equipped with facilities

for up-to-date scientific treatment of inebriates, the results have not been as satisfactory as could be desired. What is needed is a small special hospital, entirely devoted to the treatment of inebriates in charge of a Medical Officer specially qualified for dealing with such patients.

We believe that whatever the law regarding the sale of intoxicating liquors in the future may be, there will always be a certain percentage of men and women victims to the drink habit; we also feel quite satisfied that a certain percentage of these unfortunates can be reclaimed. Surely it is worth while saving a man from shamefully wasting his life—by reclaiming him—so that he may become a useful citizen. Our governments are spending thousands of dollars every year to secure new citizens for Canada; but is not one native Canadian saved to the country worth more than any foreign importation? It is proposed to establish a cottage hospital in Toronto for the treatment of indigent inebriates as soon as the necessary funds can be raised for the purpose. In this effort can we not count upon the sympathy and good-will of members of the medical profession?

Selected Articles

A CLINICAL LECTURE ON THE MEDICINAL TREATMENT OF UTERINE HAEMORRHAGE

BY ROBERT ASCH, M.D.

Specialist in Gynaecology, Breslau.

In the first place, a possible pregnancy, or the interruption of one with accompanying hæmorrhage, must be excluded, and also the possibility of the disease causing the hæmorrhage must be accurately weighed.

Menstruation can only be considered to be a physiological process when it takes place in a certain regular manner. This regularity concerns less the quantity of blood, which is subject to great individual variation, less also the length of the period, which may vary from half a day to five and even six days without being considered as not physiological: then, above all, the regular onset of the hæmorrhage, which, of course, need not be an exact period of twenty-eight days, but which should, nevertheless, be within the limits of twenty-five to thirty days, and which must be held to be physiological, so long as it keeps within about these limits in the same individual. Any deviations in the same individual, although they may not be looked on as a symptom of disease of the uterus, must at the same time be held to be a sign of some processes of irregularity of the whole system that have led to the irregular onset of the menses.

When hæmorrhages take place in a quite irregular manner, it is almost always pathological. When a young girl bleeds once, then after eight weeks has another hæmorrhage, has a free interval of three months, then bleeds again, it is quite natural, and does not require treatment. It is different, however, when the hæmorrhages take place in such a way that the first or second period lasts ten to fourteen days, then, after a pause of a day or two, begins again, lasts a long time, persists with more or less freedom for weeks or months; such a condition certainly calls for treatment, especially when the hæmorrhage is excessive to such a degree that one fears that the child is losing too much, considering the amount that has to be replaced at such an early period of life. Whilst amenorrhœa in the great majority of cases does not require treatment, and should be only looked on as a symptom of anæmia, or deficient development of the organism

as a whole, or of the genital system alone, irregular hæmorrhages that are excessive in quantity or that last too long in the early days of the period of puberty, must always be treated.

When does an organ bleed, or when does the bleeding not cease? Independent of deficiency of the clotting power of the blood, there are two chief factors to be taken into consideration. Either there is failure on the part of the arteries to close by compression, or there is an obstruction to the venous outflow with persistent arterial flow.

As to the bleeding from the uterine mucous membrane, its cessation is spontaneous under normal conditions. The contractions of the hollow muscular organ arrest the capillary hæmorrhage from the mucous surface equally by pressure and counter-pressure. An interruption of this mechanical process takes place when the contractility of the smaller arteries ceases or is diminished and becomes too small, when the muscular power of the uterus is not sufficient to bring about an adequate compression of the mucous membrane either as regards present intensity or length of time, or when, through processes going on in the neighborhood of the uterus, or in its substance, the backward flow of venous blood is barred, the arterial flow is still persisting.

If by bleeding, then, we understand, not simply the physiological process but a material deviation from the normal, we can distinguish two larger groups: arterial hæmorrhage with diminished contractions, and venous, in which the uterus may contract firmly.

The contraction of the musculature of the uterus leads to compression of the arteries in the uterine walls even to their finest branches. It further leads to compression of the bleeding surface, which represents the walls of a divided space; it therefore acts by pressure, like a tampon.

Arterial bleeding, therefore, is explainable by want of contraction. Apart from the cases in which a change of form of the organ prevents equable pressure on the mucous surface, as occasionally is the case when myomata are present, failure of muscular contraction, insufficiency on the part of the muscular apparatus may be a cause of the hæmorrhage continuing. Such an insufficiency may be temporary or lasting. Atony is typical of the first form, such as is met with in labor at term or prematurely. Atony may be present outside the period of puerpery.

Insufficiency arises from simple relaxation of the muscles; good muscles capable of contracting are present, but they do not do their duty. It will be the aim of the attending physician

who wished to arrest the hæmorrhage to bring the muscles to contract. This may be brought about mechanically by mechanical stimulus, by electrical treatment, or by massage. It is brought about in the simplest manner by the hæmostatic remedy *καὶ ἐξοχὴν* ergot and its derivatives.

There is, however, another condition of the muscles that does not give rise to a temporary atony, but to another kind of insufficiency that is lasting and caused by weakness of the uterine muscles.

It may be taken generally that freshly gathered ergot is the most active, as it loses its power in about three months, and from that time on, the older it is the less powerfully it acts.

If we are in possession of an ergotine always of the same power—as, for example, *sekakornin*—the point of view of the body weight of the patient must always be kept in view.

Kornutin (Kobert) has an absolutely certain action. It is so dear, however, that it can only be ordered as a substitute for the very cheap *pulv. secale cornutum* in exceptional cases.

In cases of a particular kind I would not try to do without *kornutin*, as when wishing to apply a test. A negative result, complete absence of any hæmostatic action in spite of energetic contractions of the uterus, proves that we need not expect to arrest the hæmorrhage by setting up uterine contractions. The attempts to arrest it must be made in some other way.

A by-effect of the fresh preparation, especially when it is at its best, is important. Freshly powdered *secale cornutum*, that acts particularly well in producing uterine contractions, frequently causes vomiting, or at least an inclination to it. It would be wrong, however, to conclude that vomiting or an inclination to it (and as a rule it stops at that) showed that the drug was unsuitable. The patient should, however, be warned in time of its possible effect in that direction.

Independent of the individual differences that occur in different individuals, some requiring larger doses with different intervals of administration, regard must be had to the uterus, and, above all, pregnancy. A pregnant uterus is acted on differently from one that is not pregnant: a uterus post partum that has a strong tendency to contract will, under certain conditions, react strongly to a certain quantity of *secale*, whilst one independent of pregnancy, with but little innervation for contraction—one that perhaps contains but few muscular fibres to come into action, will respond to perhaps double or treble the amount.

The power of the *secale* in setting up uterine contractions has

prevented its employment during pregnancy, and even during labor before the expulsion of the after-birth. Many dread giving *secale* before the expulsion of the placenta. The assumption that ergot may cause retention of the placenta is incorrect.

As regards the use of ergot in the early months of pregnancy, the fear that it will interrupt a normal pregnancy and bring on abortion is not justifiable. After death of the *fœtus* and its expulsion, with retention of the placenta or membranes or fragments of the former, *secale* acts extraordinarily well, and sets up good contractions. With the *fœtus* alive and the pregnancy going on, I have never seen separation of the ovum or expulsion; but, on the contrary, with even tolerably large doses, I have observed that it did not take place.

Ergot does no harm with a living *fœtus*, but rather good. When the administration of *secale* is prolonged it sometimes loses its effect. In such a case it must be left off for a time, and when begun with again it will act well. Small doses may be continued for long periods with a view of promoting development of the muscular tissues, but it will do best outside the period when it is required to arrest hæmorrhage.

In all venous hæmorrhages, whether from prolonged flow with normal commencement on the 29th day, or whether the onset is before its time, the prescription of cotarnin is called for. The hydrochlorate of cotarnin is known under the name of stypticin; a later phthalate of cotarnin has been produced under the name styptol. But stypticin even is not a specific against bleeding, any more than ergot; with the proper use of the one or the other, however, satisfactory results will be obtained.

It has not the property of exciting contractions of muscles, neither those of the smooth fibres of the uterus nor those of the blood vessels, but it may often enough come into use in the arrest of venous hæmorrhage through its action in relaxing muscles, where ergot causes compression by contraction of the walls of the veins, but does not at the same time have a similar effect on the arteries. In this way it is also indicated in arterio-sclerosis and in certain cases of chronic metritis. Stypticin and styptol, by their action in relaxing muscular fibres, allow the blood to escape from the veins, and in this way act as hæmostatics. In general diseases, too, they frequently have an excellent effect in relieving venous stasis of the whole system, in disease of the heart, emphysema, and in disease of the liver. Stypticin proves itself especially useful when given in time before an expected period (four or five days—five tablets of

0.05 gm. each). It is given again before the next period, and so on until the menstruation is forced back to its proper term. If in disease of the heart menstruation is excessive, stypticin or styptol may be given *per os*, more actively subcutaneously or into the muscles. The hæmorrhage that results from venous stasis brought about by retroflexion of the uterus, and that is not arrested by ordinary means, calls for cotarnin, which will be found to be useful so long as no growths have taken place on the mucous membrane from long persistence of congestion. The same may be said in regard to blocking of vessels from disease of the adnexa, of parametritic indurations.

The causal factors of uterine hæmorrhages cannot always be singled out. If, on making a digital examination, no pressure from a hæmatocele can be felt either encircling the uterus or lying to one side, we shall try to treat the bleeding from the mucosa itself. This leads us to the third of the recognized hæmostatic remedies: *Hydrastis Canadensis*.

If we have not to deal with hæmorrhage arising from relaxed uterine walls, if we also find no changes about the genitalia that point to venous congestion, then *hydrastis* is in place.

As it has a very bad taste, the extractum *hydrastis* should be given in the case of young girls in hot spiced or some strongly flavored wine as a corrigens. Only a small quantity of port or Greek wine will be required. If the hæmorrhage has been so far mastered that the limit is better defined, that the intervals are at least a fortnight, and that the period does not commence more than from three to eight days before its time, the extract may be exchanged for *hydrastinine*, to be given about five days before the expected anticipated onset. *Stypticin* also is helpful in such cases, and should be given a trial, when there is reason to suspect congestion in girls. If in such cases *ergot* is given during the periods, in the course of four, five, or six months, in young girls, a timely commencement and cessation of the periods may be looked for.

The giving of iron preparations to young anæmic girls when the menses are at the same time too profuse or too prolonged is to be avoided. Such hæmorrhages are frequent in anæmias. If there is chlorosis along with the anæmia, iron may be in place. The amenorrhœa itself as such is not to be treated in anæmic conditions. If iron is given to chlorotics with amenorrhœa, but little result will be obtained; usually the hæmorrhage will be more profuse every three weeks than when all treatment is suspended in the intervals. I have never seen increase of the hæmorrhage with arsenic; it may, therefore, be combined with

hydrastinine in the treatment. When we have succeeded in bringing the menses to their normal condition, and they continue in that state without the hydrastis, the arsenic may be replaced by iron, or arsenical water may be given at the commencement.

Only too often the practitioner loses patience and falls back on the conclusion that the internal remedies are exhausted—sends his patient to a gynæcologist with a view of scraping or something. The latter may also have imbibed the erroneous notion that medicines have left the patient in the lurch and proceed to operation prematurely, which might have been avoided if a suitable remedy had been made proper use of in a suitable case.

We should never lose sight of the principle that operations should be performed only when all other means fail.—*Medical Press.*

REPORT OF COUNCIL ON THE ADOPTION OF THE METRIC SYSTEM OF WEIGHTS AND MEASURES BY MEDICAL PRACTITIONERS IN PRESCRIB- ING AND DISPENSING

(1) The Council, in pursuance of the instruction of the Annual Representative Meeting (Sheffield, 758), having considered the question of a procedure by which the metric system may with least inconvenience to medical practitioners be introduced for prescribing and dispensing, submits for the consideration of the Divisions the scheme embodied in the following report and recommendations.

(2) The Council recognizes that the full and complete adoption of the metric system in practice depends upon its being made the system according to which students are trained, so that they will learn to think of quantities primarily in grams, centimetres, etc., instead of, as at present, primarily in terms of grains, minims, etc. It is therefore recommended that the teaching, both theoretical and practical, in pharmacology and materia medica, should henceforth be according to the metric system.

(3) The advantages of the adoption of the metric system may be briefly stated:

- (a) All calculations and measurements are simplified where the various measures are related by multiplication (or division) by 10, which is the basis of our system of notation.
- (b) The adoption by the medical practitioner of the same system of measures as is universally employed in laboratory work would make the reports of the investigator more readily intelligible to the practitioner, and would tend to keep in closer touch the investigations of science and the applications of practice, and so to unify British science and practical medicine.
- (c) The work of Britain and of other modern nations would both gain by being stated in the same terms, and so being mutually intelligible.

(4) The difficulties in the way of the introduction of the system are, first, the difficulty which practitioners trained to use the English system of weights and measures find in adapting themselves to a new system in prescribing and (when they dispense for themselves) in dispensing, and secondly, the difficulty of bringing about the necessary co-operation between doctors and

chemists in cases in which doctors do not themselves dispense. These questions are considered separately in the following portions of this Report:

A.—TRANSITIONAL PROCEDURE SUGGESTED FOR ADOPTION BY
MEDICAL PRACTITIONERS.

(5) To practitioners who have been trained according to the present system, the Council recommends the adoption of transitional procedure, which would enable them at once to adapt their prescriptions to the measures of the metric system, and so avoid the drawbacks that would arise from a divergence in practice between junior and senior practitioners, and would also at once secure for senior practitioners the advantages which make the general adoption of the metric system desirable.

(6) The difficulty before the practitioner who has been trained to think in terms of grains and minims is to translate his quantities readily into grams and cubic centimetres, and if absolute exactitude were necessary he would require the constant use of tables of equivalents. In practice, however, the most common mode of administering medicines is by spoonfuls, and even when these are poured carefully into a medicine glass the range of variation is relatively wide and the dosage must be such as to make this variation entirely safe. The Council, therefore, feels justified in recommending to the profession as a transitional measure the following methods which are based on the actual conditions of British practice, and for the suggestion of which the Council is indebted to Dr. R. C. Buist. These will be found to give automatically the conversion of a dosage in grains and minims into a prescription which the dispenser can measure in grams and cubic centimetres with an approximate exactitude well within the range of variation of spoon measures.

Mixtures.

(7) In the prescription of an 8 oz. mixture, of which each tablespoonful is to contain

- (a) Tr. Belladonnæ, m V.
- Spt. Ætheris, m X.
- Vin. Ipecac., m XV.
- Syr. Scillæ, m XX.
- Inf. Senegæ ad $\frac{1}{2}$ oz. (*i.e.*, m CCXL.).

The metric prescription for the mixture would be:

- (b) Tr. Belladonnæ, 5.
Spt. Ætheris, 10.
Vin. Ipecac., 15.
Syr. Scillæ, 20.
Inf. Senegæ ad 240.

On comparing (a) and (b) it is evident that the numbers are the same in both.

(8) The prescriber intends a mixture to contain certain substances in fixed proportions, which will be the same in the single dose and in the bulk, and will not be affected, whether the measures be stated in minims or in cubic centimetres; the numbers of minims will be larger, but the proportions will be the same. The exact factors for the conversion of grams into grains and of cubic centimetres into minims are 15.4324 and 16.906 respectively. The procedure used in the above example is to take 16 as a near approximation to each of these numbers. (The extent to which this is inexact may be stated as 4 drops in a teaspoonful.) Now, in ordinary prescribing, 16 doses is the most common of all orders, as represented by tablespoonful doses of an 8-oz. mixture. If, therefore, in such a mixture the prescriber orders the numbers of minims of the drugs, A, B, C, D, E in each tablespoonful which he would order in a prescription in English measures, but omits the symbols, and if the dispenser measures in each case the same numbers of cubic centimetres into the bottle, the conversion from English into metric measures will be automatically completed. Thus it is recommended that the practitioner who wishes to write a prescription for metric measures should simply write without symbols the drugs with the number of grains or minims he intends to give in each spoonful, and that the dispenser be instructed that each prescription where no symbols are written is to be dispensed in metric measures.

For teaspoonful doses the bulk would be 2 ozs. or 60 c.c. and for dessertspoonful doses, 4 ozs. or 120 c.c.

(9) The following prescriptions are given in illustration:

(a) Recipe—

Tr. Nucis Vom., 5.
Inf. Quass. conc. ad 60.
Sig. Teaspoonful in water before each meal.

(b) Recipe—

Tr. Digitalis, 7.5.
Spt. Ætheris, 10.
Dec. Scoparii ad 120.
Sig. Dessertspoonful morn. and night.

(c) Recipe—

Ac. Hydrocyan., dil., 3.

Liq. Morph. Mur., 10.

Syr. Tolut., 30.

Inf. Rosæ Acid. ad 240.

Sig. Tablespoonful thrice daily.

Solutions.

(10) In ordering solutions for various purposes the proportions are so evident that no difficulty arises, and the only point to be borne in mind is the total quantity desired. Thus:

(a) Cocain Hydrochlor., 3.

Aq. ad 60.

Sig. 5% Cocain Hydrochlor.

(b) Argent. Nitrat., 1.

Aq. destil. 50.

Sig. 2% Silver Nitrate.

Pills and Powders.

(11) The procedure in ordering pills and powders must be somewhat different from that hitherto described. The order for a pill or powder is based on fractions or small multiples of the grain. The prescriber should therefore become familiar with the equivalence 1 grain=0.06 gram, which is sufficiently exact for practical purposes. To facilitate the work of the dispenser the number of pills or of powders ordered should be a multiple of ten. Thus:

Recipe—

Aloin.

Podophylli Rosinæ.

Jalapæ Resinæ.

Ext. Hyoscyami āā 0.015. M. ft. pil.

M. 10.

Sig. One after each meal.

For his pill mass the dispenser simply shifts the decimal point of the prescription.

Linear Measures.

(12) The equivalence 1 inch=2.5 cm. is used in practice.

SUMMARY.

(13) The procedure here recommended for the use of medical practitioners may thus be summarized:

(a) The prescription is still to be based on the single dose.

(b) In the case of mixture 16 doses are to be ordered by writing with figures only the number of grains or minims of each ingredient in one spoonful.

(c) In the case of pills and powders 10 are to be ordered

and the prescription to give in figures only the metric equivalent of the grains of each ingredient in the single dose.

(d) The dispenser is to be informed that every prescription written without symbols is to be dispensed in metric measures.

(14) The adoption of the foregoing suggestions would overcome the difficulty of introduction of the new system by a medical practitioner who does his own dispensing, or by one whose dispensing is usually done by the same chemist. For such cases no intervention by the Divisions will be necessary beyond that of bringing this Report under the notice of the local profession. It can be left to each practitioner to take his own course.

B.—CO-OPERATION WITH PHARMACISTS.

Divisional Action.

(15) It remains to deal with the case of prescriptions given to be made up by any chemist to whom the patient may choose to go. For this purpose some definite understanding between medical practitioners and pharmacists will be necessary and Divisions could usefully bring about such understanding. The procedure would be for the Executive Committee of the Division, after ascertaining that medical opinion in the district is ripe for the step, to make representations to the local Pharmaceutical Association, and to arrange a conference between a small number of members of the Executive Committee and a small number of pharmacists appointed by their Association.

Central Action.

(16) If, and when, the Divisions considered the time ripe, representations would be made by the Association to the Central Organizations of Pharmacists, in order that, pending the general adoption of the metric system, prescriptions might be systematically written and dispensed in the transitional method suggested in the present report.

C.—RECOMMENDATIONS.

(1) That the teaching, both theoretical and practical, in pharmacology and materia medica should henceforth be according to the metric system.

(2) That medical practitioners should now write their prescriptions in metric form, and that, to facilitate this, mixtures should be ordered in sixteen-dose bulk, and pills or powders should be ordered in tens.

(3) That dispensers should be instructed that every prescription written without symbols is to be dispensed in metric measures.

(4) That the Divisions should take the matter into consideration, and if they think desirable, confer with the pharmacists in their area.—*British Med. Jour.*

Progress of Medical Science.

MEDICINE.

IN CHARGE OF W. H. B. AIKINS, F. A. CLARKSON,
BREFNEY O'REILLY AND F. C. HARRISON.

The Sensibility of the Alimentary Canal in Health and Disease

Dr. A. F. Hertz, of Guy's Hospital, in delivering the Goulstonian lectures at the Royal College of Physicians, has taken the above subject as his theme. The first lecture has recently been published in the *Lancet*. When we consider the countless theories as to the cause and significance of pain in diseases of the viscera, the results of a series of observations carried out with scientific accuracy are of extreme importance.

Dr. Hertz finds that "the alimentary canal from the commencement of the œsophagus to the junction of the rectum with the anal canal is completely insensitive to tactile stimulation." In regard to thermal stimuli, he finds that the gastric mucous membrane is completely insensitive, and that "the feeling of heat and cold experienced when hot and cold fluids are drunk, and until now almost universally ascribed to the stomach, really originates in the lower end of the œsophagus; it lasts for a period which coincides with that during which the fluid is passing through the cardiac orifice into the stomach." The mucous membrane of the colon and rectum is likewise insensitive to thermal stimuli, while that of the anal canal is very sensitive.

Established ideas of the pain produced in hyperacidity are also upset, for Dr. Hertz shows that hydrochloric acid in strength up to 2.0 per cent. produces no sensation on the gastric mucosa. The pain of gastric ulcer and allied conditions is not due to the acid, but is a separate entity which he promises to discuss later. Similarly "heartburn" is shown not to be due to the presence in the stomach or œsophagus of excess of free hydrochloric acid or of organic acids, the result of fermentation, but is probably caused by the alcohols which are produced in the fermentative processes.

By inflating the stomach with air it was found that the cause of the sensation of fullness is the tension exerted from within on the circular muscle fibres of the stomach. In eating rapidly this sensation is produced much more quickly, as insuffi-

cient time is allowed for the relaxation of the muscle fibres, and the intragastric pressure is thereby increased. Pathologically there may be a permanent increase in tone and complete relaxation may be impossible, so that a small quantity of food may cause a feeling of fullness. On the other hand, in atonic dilatation the muscle fibres are completely relaxed and they cannot relax further, as they normally should when food is taken. Thus a feeling of distress is soon produced. Two opposite conditions may thus give rise to the same sensations.

F. C. H.

Thoracic Aneurysm

Dr. Dmitrenko draws attention to an important sign of thoracic aneurysm already enunciated by Dr. Williamson—namely, a difference in the arterial blood pressure on the two sides of the body. According to Dr. Williamson, whenever the difference between the arterial blood-pressure of the two brachial arteries attains or exceeds 30 millimetres, there is strong presumption in favor of the existence of an aneurysm. Depending chiefly on this sign, Dr. Dmitrenko was able to diagnose aneurysm of the thoracic aorta in a woman aged forty-nine, admitted into hospital for pains which she had experienced for two years in the back, between the shoulder-blades and in the chest. The blood pressure measured 125 millimetres of mercury in the left brachial artery, and 155 millimetres in the right. Radioscopic examination fully confirmed the diagnosis. In another case of a woman aged fifty-four, complaining of pains in the back, dyspnoea, dysphagia, and frequent vomiting immediately after food, estimation of the blood pressure showed 200 millimetres for the right brachial artery and 253 millimetres for the left. Radioscopic examination showed the presence of an enormous dilatation of the whole of the ascending part of the aorta, with aneurysm of the transverse and descending portions.—*The Hospital*.

The Sign of the Spinal Muscles in Pleurisy

Dr. Felix Ramond calls attention in the *Progrès Médical* to a new diagnostic sign which he has met with in cases of pleurisy and which he names the sign of the spinal muscles. On examining the back of a normal individual in the standing position, the outline of the two superficial spinal muscles, the ileo-costalis ex-

ternally and the longissimus dorsi internally, can be readily made out. Palpation of the lumbar region shows these muscles to be in a state of tension, and their mass varies in thickness according as one or both of them enters into action. In patients with pleurisy, however, the two muscles are in a state of permanent reflex contraction on the affected side, and from this several phenomena result which, taken together, constitute the sign of the spinal muscles. On first inspection the muscular mass in the lumbar region appears larger and more projecting on the side of the pleurisy. On palpation it gives a sensation of hardness and resistance to pressure quite different from that of the mass on the sound side. If the upper attachments of the middle portion of the longissimus dorsi be hit with a percussion hammer at the level of the sixth or seventh dorsal vertebra two or three fingers-breadth from the middle line, while at the same time the muscular mass is palpated, the muscles will be found to vibrate under the blow. This sign, in the absence of others, is not diagnostic of a pleural effusion, since it is met with in patients whose muscular reflexes are exaggerated, such as cachectics, alcoholics and neurasthenics. The other two signs are, however, pathognomonic. They may all be present in the one case, or may appear separately. Objective enlargement is, however, constant.

If the other signs appear to be absent they can be elicited by making the patient bend from side to side. Normally the muscles on the flexed side are completely relaxed, while those on the opposite side are more tense and harder. If pleurisy is present, *e.g.*, on the right side, flexion to the right will not give a sensation of complete relaxation of the muscles, whereas flexion to the left makes them of extraordinary hardness, especially if their superior attachments be struck with the hammer. The author has noticed in a few cases that the sign would seem to have spread somewhat to the sound side. In these he has found that a large effusion was present corresponding to the triangle called Grocco's. Out of seven cases of this sort seen by the author he has in three succeeded in removing a small quantity of fluid from the inferior cul-de-sac of this supposedly normal pleura.

The duration of the sign exceeds that of the pleurisy by three or four weeks, and thus serves to establish a retrospective diagnosis. In three cases it has been noticed as late as six months, nine months, and three years after. Its persistence is of bad diagnostic import and indicates that the inflammatory process has continued after the disappearance of the effusion, and that cure is more apparent than real. The sign is constant in primary pleurisy, and the author has found it in 94 per cent. of cases of

pleurisy due to pulmonary tuberculosis. It was met with in all three cases of pleurisy from Bright's disease seen by the author, but only in five out of eight cases of pleurisy from heart disease. In seven cases of suppurative pleurisy it was present four times, and the curious observation was made that the sign tended to become negative in proportion as the purulent inflammation of the pleura increased. It would seem to be of certain diagnostic importance with regard to inflammatory pleural effusions, for it was not present in three cases of pure pneumo-thorax without reaction of the serous membranes, nor in three out of five cases of pneumonia, its presence in the other two being, no doubt, due to an accompanying pleural inflammation. The author thinks the sign of importance in that all other signs of pleurisy are inconstant and indefinite with the exception of dullness. He acknowledges that it is of secondary value, but in view of its constancy and specificity he maintains that it is worthy of attention in doubtful cases, which are not so rare as might be imagined. At any rate, the sign is an interesting one which demands to be known widely so that its value may be thoroughly tested.—*The Hospital*.

Treatment of Acute Catarrh of the Upper Air Passage

G. Zuelzer recommends the treatment of acute catarrh of the upper air passages by the inhalation of suprarenal preparations (*Berl. klin. Woch.*). He states that Spiess's vaporiser enables us to reduce the various medicaments to such a fine spray or cloud that it becomes intimately mixed with the inspired air and penetrates into the lung at each inspiration. The local action of adrenalin on mucous membranes has long been known. Segel and later Pick found that when applied in fine spray adrenalin acted marvellously in bronchial asthma. The action in this case consisted in a specific one inhibiting the secretion through the sympathetic and a local anæsthetic action. The author has applied adrenalin in spray form in 25 cases of acute and chronic bronchitis, laryngitis, pneumonia, and tuberculosis. The acute catarrhal cases were objectively and subjectively improved in a most striking manner. Extensive bronchitis, with diffuse rhonchi, was cleared up—at all events temporarily—in from five to ten minutes. The patients were able to sleep without any codeine, although they had suffered from sleeplessness, owing to the cough and dyspnoea, before. He states that the course of the acute bronchitis cases was obviously shortened by the treatment. He used glycirenan, which is a solution of 1 gram of epirenan

in 750 c.cm. of water and 250 c.cm. of glycerine added; 1.3 gram of this is sprayed at one time. Chronic catarrhs were not materially improved by the treatment. A few patients with emphysema derived some benefit during the inhalation, while others were not affected one way or the other. In two cases of chronic interstitial pneumonia considerable improvement followed, consisting in the clearing up of the catarrhal signs. A third case was not so improved. In acute croupous pneumonia the cough disappeared almost immediately. The tuberculosis cases were not improved, save two mild cases, in which the rales at the apex cleared up in five and fourteen days. In conclusion, the author states that no ill-effects of the adrenalin were seen in any of the cases. The pulse and blood pressure remained uninfluenced, and glycosuria did not appear in any of the cases. A mild attack of giddiness was noticed in a few cases, but this disappeared almost immediately.—*Brit. Med. Journal.*

OBSTETRICS AND GYNAECOLOGY

IN CHARGE OF ADAM H. WRIGHT, K. C. M'ILWRAITH, FRED. FENTON
AND HELEN MACMURCHY.

Treatment of Diffuse Peritonitis

At a meeting of the Medical Association of New York City Dr. Alexander B. Johnson said he had been convinced by experience that the most satisfactory position was a modified Fowler, in which the patient's head was moderately raised by blocks placed under the head of the bed.

In the treatment of cases of diffuse peritonitis now in vogue at the New York Hospital the aspirating after the opening of the abdomen was done quite independent of any posture. With the apparatus there in use steam power was employed, and from thirty to ninety pounds of suction were used. By this means the pus and other exudates were completely removed through a small steel tube inserted into the abdominal cavity. The results had been most gratifying, for patients who formerly died now recovered.

Posture in Obstetrics.—This paper was read by Dr. George L. Brodhead, who said that while we recognized the fact that in many cases position alone did not give the desired results, still, we had in appropriate posture a most valuable aid in obstetrical treatment. He then proceeded to speak of posture in pregnancy, posture during labor, and posture during the puerperium. During pregnancy the patient was advised to rest for an hour or two each day, preferably after the midday meal, with the clothes loosened and the corset removed. In the early months it was well to warn the patient to take no unusual exercise during the days when she would ordinarily have menstruated, and when the patient had previously had a miscarriage the recumbent posture was advised for a week at such times. For retrodisplacements, in addition to the pessary, the knee chest, or at least the lateral posture should be insisted upon for a certain period of each day.

The most interesting part of the paper was that dealing with the rectification by posture of faulty presentations and positions. In occipitoposterior positions he said it had been suggested that the patient lie in the lateral posture, on the side toward which the child's back was turned, while in mentoposterior positions she should lie on the side toward which the abdomen faced. By this means it was believed that in the former case flexion, and

in the latter extension, was favored, while the tendency to anterior rotation was also increased.

Posture in Gynecology.—In this paper Dr. Henry C. Coe first gave some reminiscences, extending over more than twenty-five years, in the course of which he stated that Krug's application of Trendelenburg's posture to intrapelvic surgery had marked a new era. When, he said, we contrasted the long, blind Freund's operation of twenty years ago (some of which he had known to last three or four hours), attended with a mortality of seventy-five or eighty-five per cent., with the rapid, exact work now made possible, he felt that we owed to the pioneer in this line a debt which we could never sufficiently repay. Dr. Coe's present practice was to examine a patient first in the ordinary dorsal posture; employing the lithotomy position for all surgical work on the vagina. The Sims position here, he said, he had entirely abandoned. In order to confirm a diagnosis of prolapsed ovary or adherent uterus, the patient was placed in the genu-pectoral, which was almost his favorite position also for replacing a movable uterus and introducing a pessary. In the case of virgins, in every instance of malignant disease of the uterus, a careful recto-abdominal examination was made with the patient on her back. Of Trendelenburg's position it was unnecessary to speak, as everyone was familiar with it and every surgeon was provided with a table which enabled him to elevate his patient readily. It should be noted that the extreme degree of elevation originally advocated by Trendelenburg was not favored by modern operators, who were usually able to work at an angle of from forty-five to sixty degrees. Much might be said in regard to the patient after operations. It was sufficient to state that great latitude was now allowed as to turning on the side, sitting up in bed, etc., after abdominal section. In a word, simplicity was now the rule in gynecological practice, and nature was imitated rather than forced into rigid theoretical lines.

Dr. F. J. A. Torek said that Fowler's position had now been in use for quite a number of years, and was still regarded by many as the best possible in operative cases of diffuse peritonitis. He believed, however, that it was a delusion, and it was fully six years ago that he had first publicly expressed his conviction of this. He was glad to learn from Dr. Johnson that it was disregarded in the treatment of such cases at the New York Hospital. The condition was not at all analogous to that where there was ascitic fluid, as had been stated. In many instances the pus did not run down. The employment of the Fowler position here, therefore, was clearly illogical. The thing to do was to get at the pus and remove it directly.

Dr. Johnson, in closing, explained that after the opening of the abdomen in these cases of diffuse, purulent peritonitis the nozzle of the aspirating apparatus was put first into the evident loculi of pus, and then into other places where it might be expected that pus would be found. It was but seldom that the apparatus was employed after the operation, and when this was the case the very powerful suction was not used, but a feeble suction. After suprapubic cystotomy and in some other special conditions, however, mild aspiration was sometimes kept up for a week at a time.

Dr. Berg, in closing, said that the application of the vacuum principle to the treatment of diffuse peritonitis, as described by Dr. Johnson, was certainly a most brilliant achievement.—*N. Y. Med. Jour.*

Disability Resulting From Childbirth

In an analysis of 2,634 obstetrical cases, H. M. Little (*Can. Med. Assoc. Jour.*, 1911, i, 125) decries the use of the abdominal binder. While he does not hold it responsible for all the ills resulting from the management of the puerperium, he believes that it is a most important factor in its influence on the adverse conditions resulting from labor. It opposes any involution of the round ligaments, which would tend to draw the uterus forward; it prevents the falling forward of the uterus upon the bladder, with the consequent tendency to spontaneous micturition, and, finally, tends permanently to hold the uterus back, so that the anterior lip of the cervix is drawn forcibly from the more or less fixed posterior lip, and laceration, if present, is prevented from healing by the formation of scar tissue in the angle of the wound. Not only does this permanent opening of the cervix cause discomfort later, but it is usually associated with a permanent backward displacement of the uterus. Where it is not used it is possible to obtain a better idea of the involution of the uterus and of the condition of the bladder, and its absence allows freedom of movement by the patient with a resultant improvement in the condition of the abdominal muscles. It is as important to avoid over-stretching of the abdominal muscles by a too long second stage, as, on the other hand, it is wrong to undertake operation before the cervix is fully dilated. While it has ceased to be a disgrace to allow a laceration of the perineum, now the disgrace is to allow such a laceration to go unrepaired.

Saline Infusion in Eclampsia

A. K. Armstrong reports the following case: A poorly nourished woman, aged 34, had previously four normal confinements. Her present confinement at 8 months occurred before the arrival of the midwife, who noticed nothing abnormal, and after attending to the mother and child left. Five hours later the patient was seized with convulsions. When seen by the writer she was unconscious, pale, the pulse imperceptible, the heart beats irregular in force and frequency, but very rapid, about 200 per minute; the extremities cold and flaccid, and the respiration irregular and stertorous. At intervals of from 5 to 10 minutes she developed convulsions. They commenced with a tonic stage, during which the face became cyanosed, the limbs rigid and hands tightly clenched, and blood oozed from the vagina. A clonic stage followed; the duration of the whole fit was about 5 minutes. Hot water bottles were placed at her feet, and normal saline solution was infused at the rate of about 2 pints per hour into the subcutaneous tissue of the axillæ and thighs, the total amount infused being 4 pints. During the infusion she gradually improved. She had one or two more fits, but these became much less severe. When the infusion was stopped she became conscious, though very drowsy, her respirations quieter and more regular, the pulse steady and beating at the rate of 90. There was no subsequent return of the fits. The urine after the infusion showed 3.5 per 1,000 of albumin.

The points of interest are the length of time after delivery before the onset of any symptoms—namely, 5 hours. When the infusion was commenced the patient was *in extremis*, and, if left to herself, must have soon died. She ultimately made a satisfactory recovery.—*The Med. Review*.

Editorials.

METRIC PRESCRIPTIONS

The profession of Canada have been somewhat slow in making use of the metric system, especially as to prescriptions, largely because the physicians of Great Britain have not shown any disposition to accept it in its entirety. It seems not unlikely, however, that British physicians in the near future will accept something like, if not absolutely, the Continental system. The Council of the British Medical Association, acting on the instructions received at the Sheffield meeting in 1908, presented a report in April last recommending a procedure by which the metric system may with the least inconvenience to medical practitioners be introduced for prescribing and dispensing medicines. Certain methods, as suggested by Dr. R. C. Buist, are recommended by the Council (*B. M. J.*, April 29). The main principles underlying these methods are thus described by the *Journal*: "A mathematical precise translation of British weights and measures into their metric equivalents is not necessary, for, however carefully the dose of any drug to be taken by the mouth may be prescribed, the precise amount the patient takes will always vary when the drug in question forms part of the mixture administered in tablespoonfuls and the like; for such quantities when poured out are never precisely the same. Hence a translation is sufficiently accurate if the factor to multiplication both for grains and minims be taken as 16 instead of 15.43 in the case of grains into grams, and 16.9 in the case of minims into cubic centimetres. The second principle is that the

amount to be given, say, as now, to be thought out by volume in the case of fluids, by weight in the case of solids, and shall be the amount for a single dose, and not, as in France, a quantity for 24 hours. The third is that when the mixture is prescribed the quantity ordered to be taken on each occasion shall, when multiplied by 16, make up either 2 oz., 4 oz., or 8 oz. The fourth is that in writing a prescription no symbols of any kind shall be used, the amount of each constituent desired to be contained in a single dose, including the water or other solvent, being indicated merely by a figure (which in the prescriber's mind indicates minims or grains), and that the dispenser, when faced by such a symbol-free prescription, shall understand that he is to dispense it on the metric system. With regard to pills and powders, the procedure is somewhat different." (See report.)

The report is so important and the methods recommended so simple that we give a full text in this issue—page 361.

TORONTO GENERAL HOSPITAL

In our brief report of the last meeting and banquet of the Association of ex-Staff Physicians of the Toronto General Hospital we omitted a very important item. The "Old General" has a very interesting history, as its ex-house surgeons and many other friends know well. The collation of its history has been entrusted to a committee. It gives us much pleasure now to announce that Dr. Jas. F. W. Ross has generously agreed to pay for the publication of a book containing such history, which is now in the course of preparation.

CLINICAL CONGRESS OF SURGEONS OF NORTH AMERICA

The second meeting of this Clinical Congress will be held in Philadelphia, November 7-17 inclusive, 1911.

Our readers will probably remember that the idea of such an organization was first conceived by the editors of "Surgery, Gynæcology and Obstetrics," in September of last year. Several thousand invitations were issued and fully 1,300 attended the first meeting at Chicago, Nov. 17-19.

The visitors went to Chicago to see clinical work and not to read or listen to papers.

Dr. Murphy at that time spoke as follows: "Hearing papers and reading papers is one thing: seeing men do things is another. We all know that no such benefit can be derived from hearing papers read as can be obtained from seeing the work done before us. When you see and hear it in the latter way it is a part of yourself. When you hear it read it is still the author's, although a small part of it has been absorbed by yourself."

The meeting at Chicago was a remarkable success, and as a consequence machinery was set in motion to make the Congress an annual institution.

From a preliminary programme of the Philadelphia meeting we find that clinics will be conducted by the leading surgeons, gynæcologists and obstetricians of Philadelphia in all the large hospitals of Philadelphia, and will be conducted from 8 a.m. to 5 p.m. daily.

In addition to the clinics there will be meetings on six evenings for the discussion of live subjects in the departments mentioned.

There are no yearly membership dues, but a nominal registration fee will be charged to cover the demonstration expenses, and each person thus registering will receive a ticket entitling him to all clinics and evening meetings, and the various useful functions.

ASYLUM PROMOTIONS

The appointment of Dr. Clarke as Superintendent of Toronto General Hospital has necessitated certain changes in the Asylum service. Dr. J. M. Forster's many friends in Toronto and vicinity are pleased to know that he has been transferred from Brockville to Toronto, where he becomes Medical Superintendent of the Asylum for Insane in the place of Dr. Clarke.

Dr. Forster graduated from the University of Toronto in 1886, and since that time has been a very enthusiastic and successful worker in his specialty.

We are very much pleased to announce that Dr. J. C. Mitchell has been appointed Medical Superintendent of the Hospital for Insane at Brockville. Dr. Mitchell entered the service in 1902, and has done much valuable work. For years before that date he was generally recognized as one of the prominent physicians of Ontario, and is one of the past-Presidents of the Ontario Medical Association. As to Dr. Mitchell's fitness for the position, we are happy to say there is no doubt in the minds of his many friends. We offer him our sincere congratulations on his well-earned honor.

Dr. F. N. Neely, Assistant Physician at Brockville, has been promoted to the position of Assistant

Medical Superintendent. Dr. P. McNaughton, Assistant Medical Superintendent at Brockville, has been transferred to a similar position at Hamilton.

TUBERCULOSIS IN TORONTO

Dr. Hastings, as Medical Health Officer of Toronto, is certainly doing remarkably good work; and we are pleased to state that he is very cordially supported by the lay press of the city. Since his return from his tour of inspection with ex-Controller Harrison in the United States he has made many valuable suggestions to the City Council. He has in view a comprehensive scheme for a large institution to be composed of several buildings placed on a large property.

At present we shall refer only to one of his recommendations. He has proposed that the sum of \$175,000 be expended for the purpose of fighting tuberculosis. The *Toronto Mail*, in speaking of his work, says: "His task is one of great difficulty. It would be much easier if the reasons for the projects that are to be carried out were in all cases as obvious to the mass of the citizens as are the reasons for the majority of the undertakings of the other departments of city government." In the same article the writer goes on to state that when the public understand the scheme of reform they usually co-operate to carry it out.

While in the past it was thought by some people that Dr. Hastings "talked too much," we are inclined to think that under his present heavy responsibilities he weighs very carefully all that he has to

say. He certainly has the faculty now of *talking to the people* in such a way that the people can understand what he says to them. For instance, he tells the citizens of Toronto that seven people in Ontario are dying every day of tuberculosis. He then tells the people that this disease is preventable. The people fortunately are beginning to realize that this is an important matter; that it is as important as the seawall, the Bloor Street viaduct, or even the hydro-electric light, if not more so. Of course, this happens to be an old story, but Dr. Hastings, with the strong lay press at his back, appears to be making the people suddenly realize a fact which they should have appreciated many years ago.

NEW SUPERINTENDENT TORONTO GENERAL HOSPITAL

Dr. Charles Kirke Clarke was appointed Superintendent to the Toronto General Hospital in the place of Dr. J. N. E. Brown, resigned, May 3rd. We are told on behalf of the Governors that in selecting Dr. Clarke the Board was influenced by his ability as an administrator coupled with his attainments in the field of medicine.

Dr. Clarke was born in Elora, Ont., in February, 1857. He is a son of the late Lt.-Col. Chas. Clarke, for many years Clerk of the Legislative Assembly of Ontario. Dr. Clarke graduated M.B. from the University of Toronto in 1878. During his student course he spent a good portion of his time as Clinical Assistant in the Toronto Asylum under the late Dr. Joseph Workman.

After graduating he acted as Assistant Medical Superintendent in the Hamilton Asylum, and then for a time in the Rockwood Asylum at Kingston, and became Medical Superintendent of the latter institution in 1885. He succeeded Dr. Dan. Clark as Superintendent of the Toronto Hospital for Insane in 1906.

The Hon. W. J. Hanna, in speaking about Dr. Clarke, said: "We are very sorry to lose him. From the time I came into this Department, six years ago, I have been in very close touch with Dr. Clarke, particularly since he came from Kingston to Toronto. He has done much to make our Asylum service what it is. He, with Dr. Ryan, of Kingston, and the late Dr. Willoughby, of Colborne, visited the best institutions of Europe some few years ago. They brought back ideas about equipment and treatment that we have adopted with excellent results in several of our institutions. Then he established the outdoor clinic in this city, concerning which little has been said, but which has been of real service to many persons threatened with mental breakdown." Under the circumstances, and especially in view of the fact that the new hospital will be practically a University hospital, it seems fitting that the Dean, who is also a Professor in the Medical Faculty of the University of Toronto, should be the Superintendent of this Hospital. Apart from such considerations, Dr. Clarke's high attainments, great executive ability, and abundant supply of ballast in the shape of common-sense and good judgment furnish sufficient reasons for concluding that he is eminently well qualified to fill the very important position for which he has been chosen.

Notes

TORONTO ACADEMY OF MEDICINE

The Fourth Annual Meeting of the Toronto Academy of Medicine was held in the new building, 13 Queen's Park, Wednesday, May 3rd.

The following officers were elected for the ensuing year: President, Dr. N. A. Powell; Vice-President, Dr. R. A. Reeve. The retiring President was Dr. Albert A. Macdonald. Hon. Secretary, Dr. Harley Smith; Hon. Treasurer, Dr. W. A. Young; Chairmen of Sections—Medicine, Dr. Graham Chambers; Surgery, Dr. H. A. Bruce; Pediatrics, Dr. J. T. Fotheringham; Pathology, Dr. J. J. McKenzie; Ophthalmology, Dr. C. Trow; State Medicine, Dr. J. W. S. McCullough; Members of the Council, the physicians named and Drs. J. Ferguson, John Malloch, H. J. Hamilton, J. F. W. Ross, W. P. McKeown, A. McPhedran, F. N. G. Starr and Edmund E. King.

THE ONTARIO MILK ACT

An Act respecting the Production and Sale of Milk for Human Consumption was passed during the last session of the Ontario Legislature. We quote from the Act the following clauses:

The Council of every municipality is hereby authorized to pass by-laws for regulating milk produced for sale, offered for sale or sold within such municipality as to

- (a) The care of cows producing milk for sale for domestic consumption;
- (b) The cleanliness, ventilation and sanitary conditions of the places in which cows are kept or milked or in which milk is stored;
- (c) The water supplied to cows;
- (d) The care and cleansing, construction and type of all utensils used in handling milk, whether by producers, carriers or vendors;
- (e) The care, storage, transportation and distribution of milk by producers, carriers or vendors;
- (f) The making of bacteriological tests for the purpose of ascertaining the wholesomeness of milk offered for sale by any producer, carrier or vendor; and
- (g) Such other matters regarding the production, care, transportation or sale of milk as the Council may consider necessary;

4—(1) The Council of every municipality is hereby authorized to enact by-laws regulating the granting of licenses to vendors of milk for human consumption in that municipality, and shall have power to refuse or cancel such licenses.

5—(1) The Council of every municipality is hereby authorized to enact by-laws fixing the standard for butter fat and total solids of milk sold in such municipality, but no milk shall be sold for human consumption which contains less than twelve per cent. of solids, of which three per cent. shall be butter fat.

6—(1) The Council of every municipality is authorized to appoint an inspector or inspectors for the enforcement of this Act.

(2) Every such inspector shall have the right to inspect the premises of every vendor licensed to sell milk within the municipality for which he is inspector, to see that the requirements of this Act and the regulations enacted hereunder are fully com-

plied with, and to take samples of milk for examination and testing.

7. No milk shall be sold from any cow which, upon physical examination by a duly qualified veterinary surgeon, shall be declared to be suffering from tuberculosis of the udder or milk glands, or whose milk, upon bacteriological or microscopical analysis, is shown to contain tubercle bacilli, or which is known to be suffering from splenic fever or anthrax, or any other general or local disease which is liable to render milk from such cow a menace to the public health.

9. No cans, bottles or other utensils used in the distribution of milk shall be used for any other purpose whatsoever, and all such cans, bottles and other utensils must be thoroughly cleansed before again being used.

10. The Council of every municipality is authorized to establish and maintain or assist by annual grant or otherwise in the establishment and maintenance of milk depots in order to furnish a special supply of milk to infants.

11. It shall be unlawful to apply the term "certified" to any milk which does not comply with the following standard:

- (a) It shall be taken from cows semi-annually subjected to the tuberculin test and found without reaction;
- (b) It shall contain not more than 10,000 bacteria per cubic centimetre from June to September, both inclusive, and not more than 5,000 bacteria per cubic centimetre from October to May, both inclusive;
- (c) It shall be free from blood, pus, or disease-producing organisms;
- (d) It shall be free from disagreeable odor or taste;
- (e) It shall have undergone no pasteurization or sterilization, and be free from chemical preservatives;
- (f) It shall be cooled to 45 degrees Fahrenheit or under within half an hour after milking, and kept at that temperature until delivered to the consumer;
- (g) It shall contain twelve to thirteen per cent. of milk solids, of which at least three and one-half per cent. is butter fat;
- (h) It shall be from a farm the herd of which is inspected monthly by the veterinarian, and the employees of which are examined monthly by a physician;

12. It shall not be lawful to apply the word "pasteurized" to any milk unless all portions have been subjected for at least twenty and not more than thirty minutes to a temperature of not less than 140 and not more than 150 degrees Fahrenheit and then

at once cooled to 45 degrees Fahrenheit or under and kept at that temperature until delivered to the consumer.

15. Notwithstanding anything contained in The Milk, Cheese and Butter Act, being chapter 53 of the Acts passed in the 8th year of the reign of His late Majesty King Edward VII., nothing in the said Act shall apply to milk produced, offered for sale, or sold, for human consumption; and the provisions of the said Act, so far as they relate to such milk, but to that extent only, are repealed and the said Act shall apply exclusively to milk and cream to be used in the manufacture of cheese and butter.

16. Except as hereinbefore provided this Act shall come into force on the 1st day of June, 1911.

SANITARY PRECAUTIONS IN SUMMER RESORTS, BOATS, ETC.

The following regulations are made under paragraph 13 of Section 13 of the Public Health Act (amended 1911):

Regulation 1.—No garbage, excreta, manure, vegetable or animal matter or filth shall be deposited on or in any of the lakes, rivers, streams or other inland waters of the Province of Ontario.

Regulation 2.—Residents of health resorts and summer resorts are hereby required to so dispose of their garbage, excreta, manure, vegetable or animal matter or filth that such shall not create a nuisance or gain entrance to or pollute any lake, river, stream or other inland water of the Province.

Regulation 3.—The owners and officers of boats and other vessels plying upon any lake, river, stream or other inland water of the Province are hereby required to so dispose of the garbage, excreta, manure, vegetable or animal matter or filth upon such boats or vessels that such shall not create a nuisance or gain entrance to or pollute such inland waters.

Regulation 4.—Any contravention of the foregoing regulations shall be subject to the penalties provided by the Public Health Act in respect thereto.

Personals

Dr. W. W. Hay, of Wallaceburg, is retiring from practice owing to ill-health.

Dr. Thos. Wickett, of Hamilton, owing to ill-health, has temporarily retired from practice.

Dr. J. Orlando Orr sailed for England May 26th. He expects to return to Toronto early in July.

Dr. James A. Robertson returned to his home in Stratford after a two months' trip to Italy and the south of France.

Dr. W. T. Shirreff, formerly of Fitzroy Harbor, and recently a practitioner in Hazeldean, has been appointed Medical Health Officer of Ottawa.

Dr. Charles Sheard, Jr., of Toronto, who visited his home early in the year, is still acting as house surgeon at the City Hospital, New York.

Dr. James A. McCammon, Gananoque, has been appointed Sheriff of the United Counties of Leeds and Grenville. He succeeds the late Geo. A. Dana.

Dr. J. H. Watson, Toronto, who was for some five or six weeks confined to his home with inflammatory rheumatism, was reported to be improving rapidly May 12th.

Dr. J. N. Elliott Brown, of Toronto, reached London, Eng., April 27th. We are pleased to state that he and Mrs. Brown are well and enjoying their trip immensely.

Dr. Bruce L. Riordan, as his many friends will be glad to learn, has recovered from his recent serious illness. He expects to sail for Italy about the middle of June and will return to Toronto about the end of July.

Dr. George W. Badgerow, Toronto University '94, London, England, has been appointed to the senior staff of the Throat Hospital, Grosvenor Square. He will be pleased to see any Canadian doctors coming to London, and is always delighted to be of any assistance to them.

Dr. Jerome F. Honsberger, a Trinity graduate of 1886, and a prominent physician of Berlin, Ont., has been appointed to represent the Canadian Government at the Hygienic and Public Health Exhibition to be held in Dresden, Germany, from May to October. The Canadian exhibit will be opened for only two months of this period, and Dr. Honsberger expects to return to Canada in about three months.

Book Reviews

The Dawn of the Health Age. By BENJAMIN MOORE, M.A., D.Sc., M.R.C.S., L.R.C.P. London: J. & A. Churchill, 7 Gt. Marlborough St. Liverpool: The Liverpool Booksellers Co., Ltd., 70 Lord Street. 1911.

This Utopian title suggests many things that to the ordinary mortal seem yet a long way off. Dr. Moore is hardly orthodox, to say the least, but he has a great deal of hard-headed common-sense in the matter of prevention of disease. For a medical man the book is full of thought, because a physician can read between the lines, but this is scarcely a safe work to place in the hands of the laity. It leaves the impression that doctors are merely drug-givers. He speaks of smallpox as a "filth disease"—a favorite term with the anti-vaccinationists, and utterly absurd. His plan of State physicians has been tried in many lands, but is not so successful as he would have us believe. The personal appearance of the physician, the psychic effect of his visit, has always been a factor to reckon with, and will always be.

International Clinics. A quarterly of illustrated clinical lectures and especially prepared original articles on all topics of interest to students and practitioners, by leading members of the medical profession throughout the world. Edited by HENRY W. CATTELL, A.M., M.D., Philadelphia, with the collaboration of Osler, Musser, McPhedran, Billings, Mayo, Rotch, Clark, Walsh, Ballantyne (Edinburgh), Harold (London), and Kretz (Vienna). Vol. III. Twentieth series, 1910. Philadelphia and London: J. B. Lippincott Company.

The articles of this well-known quarterly are, as always, full of interest, and, although for the most part intensely practical, one lays the book down with the feeling that it has been helpful in raising him to a higher plane. This particular volume covers everything from aphasia to the treatment of leg ulcers. Two articles, however, stand out particularly: "The Philosophy of Lancing Teeth," by Joseph Head, and "What Vivisection Has Done for Medicine," by Daniel M. Hoyt. These are particularly interesting because they are a little off the beaten track. We cannot recommend *International Clinics* too highly.

1,000 *Surgical Suggestions*. By WALTER M. BRICKNER, B.S., M.D., Adjunct Surgeon, Mount Sinai Hospital; Editor-in-Chief *American Journal of Surgery*; with the collaboration of JAMES P. WARBASSE, M.D., HAROLD HAYS, M.D., ELI MOSCHCOWITZ, M.D., and HAROLD NEUHOF, M.D. 225 pages. Cloth bound, semi de luxe, \$1.00. Full de luxe, leather, \$2.25. Surgery Publishing Company, 92 William Street, New York.

This is one of the biggest little books ever presented to the profession. In its 225 pages are found a collection of 1,000 epigrammatic, succinct, virile and instructive hints based upon actual experience, and every one a lesson in itself.

The Suggestions are so arranged and indexed that all subjects covered can be immediately referred to and the particular hint upon any particular subject immediately found. It bristles with pointed and useful suggestions, which in many cases might just turn the scale from failure to success. Its mechanical presentation is a feature worthy of mention. It is square cloth bound, stamped in gold, printed upon India tint paper, with Cheltenham type, with special marginal side headings in red. A dollar could not be better invested than in the purchase of this book.

What Shall I Eat? A Manual of Rational Feeding. By DR. F. X. GOURAUD, formerly Chief of the Laboratory of the Medical Faculty of Paris; with a preface by PROF. ARMAND GAUTIER, of Paris. Only authorized translation into the English language, by Francis J. Rebman. With a glossary containing definitions of the principal technical terms, and an index of diseases referred to in the text. New York: Rebman Company, 1123 Broadway.

This is a book that will give to the English-speaking reader an idea of dietetics as regarded by the French school. The text is simply written and the style is by no means solely a medical one, so that it is a work that will appeal to the layman as well who is at all interested in the important subject of hygienic nutrition. No hard and fast rules are prescribed; the writer gives one the facts and leaves one to draw one's own conclusions as to the value and indication for a particular foodstuff in a given case. Quite interesting are the sections on the question of alcohol, white bread, and vegetarianism. It is a book that will repay careful reading and study on a much-neglected part of the practice of medicine.

A Treatise on Treatment. Designed for the use of practitioners and students of medicine. By JOGENDER LAL CHUNDRÀ. L.M.S (Calcutta University), Examiner of Clinical Medicine, National Medical College, Calcutta. With charts and illustrations. First edition. Calcutta: 5 Gopee Kristo Paul's Lane, 1911.

This book has been written as an aid to the junior medical practitioner in his everyday practice. The author makes no claim to originality, but has collected the recent literature and accepted outlines of treatment and compiled them here in a more or less annotated form. That the writer is a voluminous journal reader is indicated by his many references. The work has not been brought fully up-to-date, for we see no mention of "606" in the treatment of syphilis. Proprietary pharmaceuticals evidently play a large part in the practice of medicine in India, if one is to judge by the present volume. Typographically the book is not all it should be and would repay a careful revision, but it will be of interest to the Western medical man as giving him a glimpse of the East.

Obituary

DANIEL ARCHIBALD SINCLAIR, M.D., M.R.C.S., ENG.

Dr. D. A. Sinclair, of Toronto, died at his late residence, 315 Spadina Avenue, May 9th, aged 68. Heart failure associated with la grippe is said to have caused his death after about one week's illness. He attended Rolph's School and graduated M.D. from Victoria College in 1864. After post-graduate work in England, where he qualified for M.R.C.S., he practised in Melbourne, Ont., for over thirty years, and moved from there to Toronto in 1895. Two of his sons became physicians, one, Dr. D. S. Sinclair, is now practising in Buffalo; the other, Dr. D. A. Sinclair, a very bright and promising physician, died last October.

Selections

A Simple Technique for Preparing Salvarsan in Oily Suspension

Alfred J. Hart, of New York, has adopted an ingenious and effective method of suspending salvarsan in iodipin. He employs only a sterile glass syringe and a sterile thin glass stirring rod. He writes: "The stand I use is made from a sixty gramme ointment pot or a sixty gramme bicarbonate bottle and a cork to fit.

"The syringe I use is in three pieces, 'Luer' type, made entirely of glass.

"The cork is hollowed out in the centre to fit around the barrel (b). The piston (f) is slipped into the barrel to the 5 c.c. mark, and the whole combination fits snugly into the container (a), the piston head impinging on the bottom of the container (a). Two cubic centimetres of warm sterile liquid paraffin or iodipin are poured into the barrel (b), which is thus made to serve as a graduate. The salvarsan (six decigrammes) is now added, a little at a time, from its original container and thoroughly mixed in the oil, with the sterile glass stirring rod. From time to time a few drops of oil are added until the total amount in the cylinder is about four cubic centimetres. The last few drops of oil are used to wash off the few particles of salvarsan left sticking to the rod. The tip of the syringe (d) is fitted into the barrel (b at c); the whole apparatus is then inverted and the point dipped momentarily in sterile molten paraffin, which effectually seals the syringe. The cork and the syringe are then pulled from the container, while it is still in the inverted position, the cork to act later as the grip when the syringe is used.

"A rubber band passed over the tip and over the plunger end, after the manner of carrying a filled blood counting pipette, allows the filled syringe to be transported easily and safely.

"If only half the dose (2 c.c. or 0.3 of salvarsan) is used, the piston is pulled back a little, drawing the drop of salvarsan back from the tip, and the point is resealed with paraffin.

"The paraffin seal is easily removed by slight heat to the syringe tip, followed by pushing the piston down slightly, the bubble of air descending forcing out the drop of paraffin in the lumen.

"For more than two patients for injection a ten cubic centimetre syringe is used and a larger amount prepared.

"The advantages of this technique are readily seen:

1. Every bit of salvarsan is utilized.
2. The syringe used to administer the drug being used also as the triturating graduate allows of accurate measurement and therefore accurate dosage.
3. The small number of sterilized parts, i.e., the syringe and a stirring rod, insures perfect sterilization.
4. A minimum amount of exposure of salvarsan to the air is obtained.

"A precaution for administration: Warm the syringe slightly and shake well before using."—*New York Med. Jour.*

A New Local Anaesthetic

Max Strauss, in the *Münchener Med. Woch.*, describes a new local anæsthetic which has been named cycloform and is the isobutylic ether of *p*-amidobenzoic acid. It consists of a white powder, crystalline in form, slightly soluble in water, but readily so in alcohol, ether, and benzol. Average sized cats have taken as much as a gram of the substance by the mouth without obvious ill-effects. A saturated aqueous solution renders a rabbit's cornea insensitive in two minutes. A solution of 0.01 per cent. gives an anæsthesia comparable with that of cocaine. The drug has disinfectant properties also, as has been proved by experiment. The author has made use of it to dust over small recent wounds which need to be kept open, and also in the form of an ointment in the treatment of painful burns. He has found the ointment useful for chaps, eczema, intertrigo, inflamed hæmorrhoids, and painful ulcers of the leg. It can be used for a long time without local irritation and without losing its power, and it does not delay the healing of wounds.—*The Hospital.*

More Uses of Hexamethylene-tetramine

A short time ago attention was drawn in these columns to the use of hexamethylene-tetramine (one of whose trade names is urotropine) for middle-ear suppuration. The suggestion was based originally upon the researches of Custing and Crowe, who proved two or three years ago that the cerebro-spinal fluid has an antiseptic action after this drug has been taken. Several further similar prophylactic and therapeutic uses of this substance have now been suggested and tried, mainly on theoretical grounds in the first instance. Thus in the *Journal of Ophthal-*

mology and Oto-laryngology, Dr. Dinkelspiel claims that valuable results are obtained in infective eye-lesions, such as indocyclitis, hypospyon, and sympathetic ophthalmia. It is especially in the prevention of this latter intractable condition that marked success is claimed. Then again American physicians are using the same drug for anterior poliomyelitis. Dr. Skoog writes of this treatment in the *Journal of the American Medical Association*, and Dr. Clowe in the *New York State Journal of Medicine*. Other authors also report more or less favorably on the method, which consists in the administration of three doses at intervals of one hour, each dose being 2 grains for a child of two years old. No more is then given until the following day, when the same dose is ordered, beginning at the same time as on the previous day. In the *Medizinische Klinik*, Dr. Ibrahim advocates its use in all forms of meningitis in children.—*The Hospital*.

Fractures and Osmic Acid

Italian surgeons report some very satisfactory results in cases of un-united fractures and pseudo-arthroses by injections of osmic acid. Dr. Novaro first hit upon the idea from the result he obtained in a case of spontaneous fracture of the femur, supposed due to sarcoma. The osmic acid injections were made according to the method of Winiwarter as a specific treatment for the sarcoma. Complete consolidation took place, but as the treatment failed in subsequent cases of sarcoma, Dr. Novaro concluded that the first case of spontaneous fracture was due to a syphilitic gumma. Some years later he applied the same treatment to a case of fractured femur in an officer, which failed to unite. The probability of syphilis was admitted, but specific treatment had no effect. Osmic acid injections speedily effected a cure. Dr. Zanardi reports two cases of un-united fracture successfully treated in the same way, and Dr. Onorato more recently gives an account of five cases, two cases of pseudo-arthrosis and three cases of un-united fracture, in all of which osmic acid injections resulted in rapid consolidation of the bones. In all these cases there was a history of syphilis, but specific treatment with mercury and iodides failed to produce any curative effect. The osmic acid injections are made at the seat of the injury, and about 0.5 c.c. of a 1 per cent. aqueous solution of osmic acid is injected, the injection being repeated in seven to ten days. Two or three injections are usually sufficient.

Dr. Onorato has carried out some experiments on animals to determine the mechanism of the action exercised by the osmic

acid. He finds that the injection of one drop of a 1 per cent. solution of osmic acid at the periosteum of the femur causes the formation of an exostosis at the point where the periosteum has been irritated. If, on the other hand, a considerably larger quantity is injected and still more if a stronger solution is used, necrosis of the periosteum and even of the subjacent osseous lamellæ takes place. Experimental fractures in which a small quantity of the 1 per cent. osmic acid solution was injected, healed more rapidly than those in which no such injections were made. In regard to the apparent connection between syphilis and delay in consolidation of the bone, the author was unable to obtain any experimental confirmation. Rabbits were inoculated with syphilitic virus, but there was no delay in the healing of fractures subsequently produced; but these negative results do not prove that syphilitic infection is not an obstacle to the normal healing of fractures, and clinical observation certainly points to the opposite conclusion. The experimental work shows that the injections should be limited to small doses of a weak solution of the acid. They should be made so that the solution can spread along the seat of the fracture. Large doses may produce necrosis and also a severe general reaction. In Dr. Zanardi's first case he injected 5 c.c., and this was followed by a violent local and general reaction, with extreme pain and fever.—*The Hospital*.

Ether Compresses

Dr. Pietro Franzoni, of Brescia, relates in *La Clinique* how he came to use compresses soaked in ether in cases of contusions and wounds rendered extremely painful by circulatory disturbances. The fact that œdema and tumefaction were sometimes added further to compromise tissue vitality seemed to him an additional reason for making use of this treatment. To his surprise and satisfaction, as well as that of his patients, he found that compresses of sulphuric ether always led to a prompt resorption of extravasated blood, a rapid diminution of the congestion with relief of pain, and marked improvement of the injured parts. The general condition of the patient is influenced satisfactorily also. Such compresses cause the disappearance of tumefaction and pain in cases of fracture and allow of easy reduction. In cases of peritonitis, apoplexy, phlegmon, uterine hæmorrhages, erysipelas, periostitis, synovial effusions, orchitis, iritis, tonsillitis, etc., the decongestionizing power of the drug is marked if applied early in the disease. The ether may be applied pure or after mixing it with goulard or hydrogen peroxide. It is sufficient to soak compresses in the fluid and to apply them

directly to the affected parts. As soon as dry they should be soaked again in the fluid and reapplied as long as considered necessary. The indication for their removal rests for the most part with the patient, who will declare that his pain is relieved. When dealing with open wounds, these should be covered with some waterproof material before applying the compresses. There is no harm done, however, if the ether should happen to reach the tissues. This form of treatment is superior to that by the ice-bag, as the latter weighs heavy. Ether is at once antiseptic, anæsthetic, and hæmostatic; the one disadvantage to its use lies in the fact that it is extremely inflammable, and consequently great care must be exercised to keep naked lights out of its reach.—*The Hospital*.

The Dispensary Abuse

Poverty and sickness will always abide with us, and not rarely in association. Therefore, means will have to be devised from time to time, in accordance with changing conditions, for their prevention, amelioration, and correction. In the relief of the poor sick the dispensary has proved a most useful and beneficent influence, but, like all agencies for good, its privileges have not escaped abuse. The questions of poverty and its relief have received scientific study and treatment, but the care of the poor sick has not yet been given the full and intelligent consideration its importance demands.

An interesting and comprehensive discussion of the dispensary abuse took place recently before a largely attended meeting of the Philadelphia County Medical Society and the multifarious aspects of the subject were presented by a large number of speakers, including physicians affiliated with dispensaries, as well as others not so affiliated, and also a representative of the Society for Organizing Charity. It was agreed that such abuse exists, but it was evident that widely different impressions of its degree and extent prevail. The abuse is perhaps most flagrant in institutions connected with medical colleges, where clinical material for teaching purposes is required, and it is especially conspicuous in the realm of the specialties, including surgery. It represents the gratification of a human desire to secure something for nothing, and it is in no small measure contributed to by physicians themselves, when they refer private patients to dispensaries for diagnosis and treatment. On the other hand, it was pointed out that there is considerable diversity in the fees charged by different physicians, and the sick person in modest circumstances is placed in a position in which he has

to decide whether he shall avail himself of the privilege of being treated gratuitously by a physician of recognized skill, ability and experience, whose fee he may not feel able to pay, or be compelled to submit to treatment at the hands of some other physician of lesser skill, ability, or experience, whose fee he can afford to pay. The personal appearance and attire of the patient is, of course, no guide as to his ability to pay for medical services. Sometimes even the family income cannot be depended upon as an index, for expenditure may exceed income; and families no less than communities do not always work in unison, and the stronger may not be willing to assume a part of the burden of the weaker.

Admitting the existence of the abuse, which works to the ethical deterioration of the beneficiary not less than to the material detriment of the medical profession, what shall be the remedy? It is not desired that any worthy or deserving poor person should be deprived of gratuitous medical attention, but who shall decide whether an applicant for treatment can afford to pay, and how much he shall pay? This is the crucial point of the situation, but it should be possible to establish a working standard by which a decision can be reached in the given case. Here is the opportunity for the social worker. Every applicant for medical charity should, before being received for treatment, be asked whether he can afford to pay for a physician's services or not. If the answer is in the affirmative he should be referred to a physician of his own selection; if in the negative, he should be tentatively accepted, his case meanwhile being placed in the hands of a trained worker for investigation and decided on its merits. This plan has been tried at a number of dispensaries in New York and elsewhere, and while not perfect in its results has, nevertheless, served to lessen the evil where it has been systematically employed.

There can be no doubt that as a result of the dispensary abuse the young practitioner is deprived of a not inconsiderable and much-needed income, to which he is properly entitled, while the public is at the same time and to a corresponding degree being demoralized. It is time that the abuse should be lessened, if not entirely corrected, and the common injury stopped. To this end there must be uniformity and harmony of action.—*Medical Record.*

Dislocation of the Shoulder

In the *Revue de Chirurgie* Drs. Nubert and Dugas, of Marseilles, discuss the ultimate prognosis of dislocation of the shoul-

der-joint based upon fifteen old cases of dislocation, thirteen subcoracoid, and two subglenoid, that had been readily reduced shortly after the accident. All complicated cases were excluded, in order to ascertain the final result of simple shoulder dislocations. Such cases are usually followed by functional impairment and painful symptoms for many months. This was the case with nearly all the patients. Temporary incapacity may become permanent in spite of all efforts to prevent it. It is, therefore, unwise to state what the results of a shoulder dislocation will be until several months have passed. Only exceptionally an impairment of function depends upon traumatic paralysis of parts supplied by branches of the brachial plexus. Periarthritis of the shoulder-joint is the most common cause of the sequelæ of dislocation. Peripheral neuritis is a less common cause. In some cases incapacity seems to depend upon the development of subacromial bursitis. Curiously, the authors do not refer to the liability of recurrence of the dislocation.—*The Hospital*.

Salicylates by Subcutaneous Injection

Dissatisfied with some of the results of salicylate administration by the mouth in cases of acute rheumatism, Dr. Seibert four years ago began to experiment with subcutaneous methods of introducing them into the system. He now adheres to the following rules, which have been evolved as the result of experience. In acute rheumatic infection of joints, heart, pericardium, pleura, and central nervous system, 10 c.c. of a 20 per cent. sterilized solution of fresh salicylate of soda are used per 100 lbs. of body weight. This is repeated every twelve hours; and in very bad cases, half as much again has been given. A spot outside the median line of the thigh is disinfected with tincture of iodine; through this thirty drops of sterilized cocaine solution (containing $\frac{1}{2}$ grain of the alkaloid) is injected under the skin. In fifteen minutes the salicylate solution is injected, care being taken that none of it is pressed into the skin, but that it is placed well into the subcutaneous tissues. In chronic cases an oily solution of salicylic acid is used instead of the watery solution of salicylate of soda. It is said that marked improvement is often visible within three hours of the first injection. The addition of 5 to 20 per cent. of camphor has also been found beneficial in stimulating the heart, and especially in carditic cases. One of the most valuable properties claimed for this subcutaneous treatment is the entire absence of toxic symptoms.—*The Hospital*.

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Miscellaneous

Why Not Try For One?

Medical societies sometimes offer a prize for the best essay or article upon a given subject with the object of thus bringing to light all possible information which may be of value to the profession in general.

With characteristic and commendable enterprise the Marvel Co., of New York, makers of the popular Marvel Whirling Spray Syringe, have announced (see their advertisement on page xix of this journal) a prize competition for physicians only, and offer a series of valuable cash prizes for the best essays or articles upon the "Therapeutic Value of the Vaginal Douche."

This will undoubtedly arouse much interest and secure for the Marvel Co. a valuable collection of interesting and practical points which they intend to publish and distribute among the members of the medical profession.

In this way the competition will benefit all physicians, as well as be the means of gaining for the fortunate winners a substantial sum of money.

We approve of the idea and urge our readers to enter the competition and make every effort to secure a prize.

Absent-Minded Doctors

In a play entitled "Chou Blanc," recently played in Paris, one of the characters was a hooligan, who, in order to get out of a tight place, passed himself off as a doctor, and went to sleep on the breast of the patient whom he was pretending to auscultate. However improbable this may seem, the thing has actually occurred. About a year before his death Professor Potain was called to a man suffering from severe bronchitis. The physician asked to be left alone with his patient, and proceeded to auscultate his chest, asking him to count aloud. Waiting behind the door for the deliverance of the oracle, the anxious wife was surprised at the length of the consultation, and at last went in to see what was the matter. She found the doctor asleep on the breast of her husband, who was steadily counting, and was well on the way to 500. This reminds one of the doctor who had been dining and was called from a game of cribbage. He tried to count the

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PRESIDENT'S ADDRESS, ONTARIO MEDICAL ASSO- CIATION, 31st MAY, 1911

BY H. R. CASGRAIN, M.D.

Members of the Ontario Medical Association,—I must thank you sincerely for the honor you have done me in electing me, for two consecutive years, to the highest office in the gift of this Association. I wish, further, to thank those who have labored with me in the work of the Association, at the sacrifice of much valuable time and the expenditure of no small amount of effort, in order to make these annual meetings a success. We have to present to you this year a rich and varied programme, for a portion of which no small thanks is due our medical brethren of the great neighboring republic. To them I extend a hearty welcome from this Association. They are, in reality, part and parcel of ourselves, inasmuch as medicine recognizes no national boundary. In extending to them the invitation to address us, we recognize the great work that is being accomplished in the domain of medicine and surgery in the United States.

In reviewing the progress of medicine for the past two years, we note that, while the results of research and observation on internal diseases have presented little that can be called spectacular, much of practical importance has been accomplished and at least one or two striking discoveries have been announced. Within the time under consideration we have the vaccine method of treating typhoid fever. It is probably too soon to pronounce as to the merits of this mode of treatment, yet, according to Anders (*Jour. Amer. Med. Assoc.*, Dec. 10, 1910), the value of vaccine for the following purposes must be conceded: (1) As a means of prophylaxis; (2) in suitable cases when continued during convalescence, to prevent relapses; (3) to combat local infections with the typhoid bacillus, as, for example, bone suppura-

tions which arise in the period of convalescence; (4) for the removal of typhoid bacilli from the fæces and urine in the case of typhoid carriers.

Syphilis.—During the past year numerous papers dealing with salvarsan, generally known as “606,” have appeared. This is probably the greatest discovery that has taken place in the domain of medicine for probably the last decade. The papers published in regard to its effects have been numerous and optimistic. Granting that the tone of medical opinion has been too optimistic, there yet remains little doubt that remarkable results will be obtained from this mode of treatment.

It would require too much time to enumerate in detail the progress that is being made in the various branches of medicine. While, as has been said, the past two years have, with possibly the two exceptions noted, not been productive of any startling discoveries, they have been years of activity in the line of medical research.

Progress in surgery depends, to a large extent, upon the earliest possible recognition of the surgical lesion and the technique of its treatment. The early recognition of the surgical lesion is really more of a medical problem than it is surgical. This, in itself, constitutes a problem of no small magnitude, inasmuch as it includes the education of the public. The laity must be informed, to a certain extent, in regard to the signs and symptoms of those diseases for which at the present time they do not seek the advice of their family physician, the general practitioner. The results obtained by associations organized for the study and prevention of tuberculosis show the value of a propaganda for public instruction along these lines. The surgical diseases about which the public should receive instruction are numerous. The first dressing of a wound is one of the most important factors in the prevention of infection. Incipient cancerous lesions, especially when located upon exposed mucous membranes of the skin, are apparently insignificant—so much so that very few persons seek professional advice before the lesion has grown and has reached a stage of lymphatic involvement. Women should be educated in regard to the possible significance of uterine hemorrhage, if the results of operation for cancer of the uterus are to be improved. Side by side with this education of the public must progress the education of the general practitioner in the recognition of the earlier signs and symptoms of surgical lesions.

The technique of treatment has been designated the second factor in the progress of surgery. The surgical treatment which promises the best immediate and permanent results in the largest

number of cases must be undertaken earlier, and must depend upon a more accurate diagnosis. The earlier the treatment is instituted the more difficult is the subject of diagnosis. In order to attain the requisite skill in diagnosis the surgeon must study not only his own results but the results of his colleagues throughout the world. A fortuitous trend of the times is the greater tendency for surgeons as well as physicians to spend time at post-graduate work and in attending upon the clinics held in the larger centres of population. This tendency is bound to lead to better days in both medicine and surgery.

I wish to emphasize the importance of greater solidarity in the organization of the Ontario Medical Association. I am firm in the belief that this Association should preserve its autonomy. There should be a more intimate relation between the provincial association and the county associations. A requirement for membership in the provincial organization should be membership in good standing in the local society. This will improve the personnel of the Ontario Association. The members of the local society are in much better position to judge as to the professional and social standing of applicants for membership than is this Association, and, furthermore, qualification for the Dominion Medical Association should depend upon good standing in the Provincial Association. Such procedure would go a long way towards making the medical profession of the Dominion a united body, able to accomplish all that can be accomplished by unity of action. I hope soon to see the day when this matter will be considered seriously, and when the provincial and local societies will prove a greater stimulus to each other than in the past.

This Province has enjoyed a reputation for its high standard of entrance upon the study of medicine. The standard should be still further advanced. In the first place, we should have a uniform entrance as well as graduation standard for all candidates who would practise medicine and surgery. The minimum of matriculation should be a degree in Arts from a recognized university, and such degree should be required to include special work in the natural sciences and modern languages, and also Greek, inasmuch as this latter language is the international language of science, and especially medicine.

I further hold it that osteopaths and homœopaths should be required to take the same examinations as regular candidates. The only exception being modes of treatment, except surgical, for which all should be required to pass a uniform examination.

We have this spectacle—of two or three defunct universities with representation on the Ontario Medical Council Board. This

should not be. Only those institutions actively engaged in the teaching of medicine should be represented on the Ontario Medical Council.

Some over-zealous friends of the Provincial university have urged the claims of that institution that its graduates be granted license to practise upon the presentation of their graduation diplomas, without further examination. I am utterly opposed to this. Not that I have any ill-feelings against the medical department of the University of Toronto, which I consider one of the best on the continent, but I consider such action would be unfair towards the medical department of Queen's University and the Western University, both institutions of which have been strong in their endeavors to uphold the standards of medical education in this Province.

Medicine, let me repeat, is a science of practical utility. It found its origin in the necessity of relieving human misery. It was, at its birth, but a simple and rude empiricism. When we behold that to-day, with the most rigorous and exact methods that the natural sciences can place at our disposal; when we contemplate that our scientific efforts have already won a well-attested success, by means of incorruptible statistics; when we realize by what means medicine is now able to protect the life and health of the individual, and how it can save a whole continent from the ravages of epidemics, then, in fine, our hearts may, with just pride, exult at this noble conviction—that no other science is as generous and as altruistic as that of medicine. It is not the solemnity of this moment, it is not the éclat of this meeting, that force me to make the assertion that each of our confreres and collaborators, the youngest as well as the most modest, even he, whose name is yet unknown, and who seeks in the seclusion of a laboratory the thread of a truth, the solution of a problem, the answer to a question that he has asked himself—each has reason and right to exclaim, “It is an honor, a privilege, and a joy to be a physician!”

PROFESSIONAL AND PUBLIC ASPECT OF THE PNEUMONIA QUESTION*

WILLIAM CHARLES WHITE, M.D., PITTSBURG, PA.

Pneumonia heads the list of those diseases before which our profession humbly bows in recognition of conquest. With an ever-increasing mortality confronting us, especially in large centres, nothing has been offered which is in any degree comforting as suggesting that the tables will soon turn in favor of the human element which is forced to submit annually to this infection.

Primarily interested for the last five years in the great sister lung infection, "Tuberculosis," I have been constantly struck with the fact that pneumonia frequently doubles tuberculosis in the number of deaths it claims per month. Naturally, such a condition of affairs suggests the striking contrast existing between the vast amount of money raised and spent upon the control of one lung disease, while a much more fatal infection is almost wholly neglected. This state of affairs is largely due to our lack of positive knowledge of the conditions surrounding the onset of this infection, the changes by which the body strives to resist the micro-organism, and the factors which co-operate in finally providing so graphic a conclusion as the crisis with which we are all familiar.

We have, however, certain knowledge of a positive character which has been very slow to secure a position in what should be the everyday thought of our profession—certain underlying principles which should govern the handling of every case of pneumonia, and which would go far not only to reduce the mortality, but also to prevent the incidence of pneumonia in other subjects.

Before entering upon this phase I am desirous of calling your attention to some of the difficulties which beset the research worker in advancing in his quest of relief from our present condition of subservience to this disease.

I have yet to meet a laboratory worker in this field who feels enthusiastic in his outlook on the pneumonia problem. Why is this the case? The first great difficulty is our inability to produce in laboratory animals lobar pneumonia as we see it in man. Our common laboratory animals are susceptible to infection with the commonly accepted pathogenic organism of this disease, *i. e.*,

*Read at the meeting of Ontario Medical Association, Niagara Falls, May 31st.

the pneumococcus; but they react to artificial inoculation in widely varying degree from total immunity, such as is found in the pigeon, to severe septicæmia, such as occurs in the rabbit, guinea pig, mouse and rat. We are able to produce, it is true, fibrinous exudate at the site of inoculation accompanied by hæmorrhage and œdema with occasionally increased peritoneal and pleuritic fluid; but this does not mean a lobar pneumonia. One animal, the dog, if the work of Meltzer be confirmed, responds to intrabronchial infection of broth suspensions of pneumococci by a lobar condition similar to the natural condition in the human patient suffering from pneumonia. This may establish a confirmation of the belief based upon bacteriologic studies on pneumonic lungs that the pneumococcus is the main organism responsible for pneumonia in man, and may lead to an experimental basis which will permit of a study of the underlying physiological and biological principles of the onset, progress and cure of lobar pneumonia infection.

A second great difficulty lies in the symbiotic action of micro-organisms which surrounds the relation of the pneumococcus infection of the human body. The pneumococcus is so continuously associated with other organisms in the normal mouths and so frequently in pneumonic lungs, that more than a suspicion is justified that the secondary organisms have some relation to the virulence of the infection. In this connection I would call your attention to the experiments of Park and Williams (1), who found that mass culture results in more virulent strains of pneumococcus and more frequent entrance of these into the blood stream. Mass culture is obtained by inoculating sputum into broth, allowing this to grow at 36°C. for 24 hours, and inoculating the resulting culture into the animals chosen for experimentation. In this connection the reports of Norris and Pappenheimer (2), of Duval and Lewis (3), and of Buerger (4), on the relation of allied and associated organisms are of great interest. It is possible that the question of symbiosis must be solved before our difficulties concerning lobar pneumonia have cleared away.

The symbiotic organisms are:

Streptococcus pyogenes,
Friedlander pneumo-bacillus,
Staphylococcus aureus and albus,
Influenza bacillus,
Pseudo-diphtheria bacillus, and
Streptococcus mucosus capsulatus.

Anyone who has worked at the isolation and segregation of

pure cultures will realize how gigantic is the task here represented.

A third difficulty lies in the relation of the leucocytes to this infection. One of the most striking clinical phenomena in lobar pneumonia is the polynuclear leucocytosis, carrying with it good prognosis varying directly with its degree, and yet a glance at some of the haze surrounding it shows how little we understand it. For instance: In spite of the favorable aspect of a leucocytosis in these cases there is grave doubt that this favorable influence is due to the phagocytic power to which we usually ascribe it, for Rosenow (5) found that 75 strains of pneumococci from the blood in pneumonia were insusceptible to phagocytosis when first isolated, a point associated, as he and others have shown, with virulence of the organism. Rosenow (*Loc. cit.*) ascribes much of the difficulty in obtaining phagocytosis of virulent pneumococci to a substance contained in the organism which he calls "virulin." This he is able to extract by autolysis in salt solution. Hiss and Zrisser (6), on the other hand, have laid great stress on the attitude of the leucocytes themselves in this infection, and have endeavored to solve some of the difficulties by the use of leucocytic extracts, and within a month or two, Ruth Tunnicliffe (7) has published results of experiments from which she draws the following conclusions:

1st. There is an increase in phagocytic power of leucocytes in mild cases of pneumonia.

2nd. In severe cases the power of phagocytosis is diminished until the patient improves, when it rises above normal.

3rd. There is no specificity in the phagocytic power of the leucocytes.

I must not enter this discussion further, but what I have said will serve to indicate how uncertain is our knowledge on this side of the question.

A fourth difficulty arises from lack of knowledge of the chemical processes which occur in the lobe of the lung which bears the assault of the infection and passes through the stages of congestion, red and grey hepatization, and resolution. In this field our knowledge has within the past few years gained some headway. Most interesting probably is the work of Lamar (8) in the laboratory of the Rockefeller Institute, on the influence of certain alkaline soaps of oleic acid in producing in conjunction with certain sera lysis of the pneumococcus.

We have known for some years that the pneumonic lung under sterile conditions in the thermostat would undergo marked lysis. We have known, also, that the soaps are abundantly present

during this lytic process; also that the soaps are bactericidal for certain bacteria. Lamar has made use of these facts and has found that pneumococci treated with dilute solutions of sodium oleate undergo autolysis much more rapidly and completely, and in the presence of immune sera undergo rapid and complete destruction. Further, that the inhibition which the action of soaps ordinarily suffers in the presence of protein can be prevented by such chemical substances as boric acid. Such mixtures of soaped pneumococci serum and boric acid not only prevent infection, but confer immunity on experimental animals. No increase in phagocytosis is produced. This work throws much light on the lytic processes going on during resolution, but still adds no new light to the question of treatment.

A further question is aroused by the frequent finding of pneumococci in the healthy portions of lungs of those dying from lobar pneumonia. Why, for instance, does one lobe succumb while the others survive, even though the organism is present also in the latter? The whole problem of lung chemistry is a negative and rather dark field; but that the lung tissue has some definite and peculiar chemical composition can no longer be doubted.

One of Hektoen's (9) students, working in his laboratory, thought that lung tissue should form an excellent medium for the growth of tubercle bacilli since these organisms developed in this organ so readily during life. To his surprise he found that no growth could be obtained and that the lung tissue evidently had some baneful influence on tubercle bacilli in vitro. In our own laboratory during the past year we have been studying the influence of autolysed lung extract on tuberculous infection, and find in the extract of autolysed lung some compound, probably a soapy element, which is inimical to the tubercle bacillus, and when injected with tubercle bacillus into an animal confers protection on that animal. So that a better understanding of lung constitution and chemistry will doubtless aid in elucidating many of the problems connected with its peculiar infections.

Again we are confronted by a lack of knowledge of the composition of the serum of pneumonia patients and of those animals which have been rendered immune to this organism. Evidently, as you have all convinced yourselves, the immune sera are questionable in efficacy in those suffering from pneumonia. On the other hand, as Lamar (*Loc. cit.*) and Tunnicliffe (*Loc. cit.*) have shown, there is something in the immune serum which is not in normal sera, and also in the serum of the pneumonia patients. We are perhaps nearer a solution of what this substance is from

Lamar's studies with soaps and inhibitory substances, such as boracic acid.

Let me now call your attention to certain positive knowledge concerning the pneumococcus which has accrued during the past few years, and follow this with certain suggestions which seem well founded, at least for the suppression, if not the cure, of the disease for which the organism is held responsible.

The most striking bit of positive knowledge is the uniform presence of this micro-organism in the nasal discharges and buccal cavity of practically every city dweller during many months of the year. This is the more striking when we consider that the organisms isolated from these sources in those apparently well, are often of as high virulence as those organisms obtained from the lungs of those who have succumbed to lobar pneumonia. Park and Williams (10) found typical pneumococci present in the throat secretions of a large percentage of healthy individuals in city and country. Longcope and Fox (11) found that during certain months, i.e., December to February, in other words, those months which precede the great prevalence of pneumonia, a large percentage of normal persons harbor virulent pneumococci in their buccal cavities. Leo Burger (*Loc. cit.*) found that about the same proportion of non-virulent pneumococci are to be found in the mouths of patients suffering from pneumonia as in the mouths of normal individuals, and that practically no differences were to be noted in the percentage of virulent organisms in the mouths of normal individuals and pneumonia cases—79 per cent. in the former and 77 per cent. in the latter.

Secondly, we know that the pneumococcus can live (12) in the dark in dried sputum for 35 days or more; in diffuse light for 30 days; and in sunlight only a few hours. On cloth it will live longer. We are positive, further, that pneumococcus-free persons may acquire pneumococci from positive cases; that handkerchiefs and dishes, drinking cups, etc., used by positive cases, i.e., those harboring pneumococci, are capable of transferring this organism. Cases of house infection of pneumonia are so common to-day that I need only call your attention to it to convince you of the dangers arising from rooms and houses in which pneumonia has occurred.

One of the first gleams of intelligence I had in medicine was a house infection of pneumonia in Toronto, in which a mother and two children living in one room succumbed in succession to a very graphic and virulent pneumonia.

A fact, however, with which all of us are not so familiar is the causal relation which the pneumococcus has to certain of our

chronic heart and joint cases. Rosenow, who has made the pneumococcus group especially his field of study, has lately again called attention to the chronic endocarditis cases that result from pneumococcus infection, and the persistence of these organisms in the blood; and I have lately seen a case of malignant endocarditis in which we were able to isolate pure pneumococcus by blood culture. These cases—chronic pneumococcus, endocarditis and arthritis—take this organism out of the field of acute diseases and enter against it the more serious charge of responsibility for many of our chronic maladies of formerly unknown origin.

Coupled with this phase of the question is the mutability of this organism both *in vitro* and *in vivo*. It changes not only in virulence easily, but also in morphology and cultural characteristics by artificial cultivation and animal passage, and this very elusiveness of its nature has contributed not a little to our progress in appreciation of its power against us.

In general it may be said that the pneumococcus has the whole body for its field since it sails with great freedom wherever the blood stream travels, and for this reason is frequently described as a septicæmia, but its manifestations are local, and, in addition to endocarditis and arthritis deposits, every specialist who deals with the serous structure sooner or later comes in contact with it in such serious maladies as otitis media, meningitis, bronchitis, conjunctivitis, etc.

Where such facts as these stare us constantly in the face, is it not strange that we are so slow to utilize the knowledge which we already possess of means for suppression. With the results of concerted action by means of education, segregation and fumigation in tuberculosis work before us, it seems probable that we could at least accomplish something by these means in pneumonia. It is commonly objected to this proposition that the two infections are so different that they cannot be handled in any similar manner. This objection, however, does not seem to be valid when one compares the two maladies in the following way:

Both are mainly pulmonary diseases; both the result of organisms constantly present (1, 2, 3, 4, 5, 8) within and outside of the human body; both infections are contracted mainly by inhalation and hastened to their maturity by bad housing, food and hygienic conditions (6); both are accompanied by cough and sputum containing myriads of the infecting agent; both infective through droplet (7) and air dried sputum (7); both often the result of unconscious carriers (9, 10) of infection; both are house diseases; both have no specific cure and rely on hygienic conditions for improvement; both are characterized by relapses (11); both produce sickness (8) in lower animals; both germs become more

virulent by animal passage (12); both germs are capable of life outside the body for hours to weeks (7) dependent upon environment; both remain quiescent in the body for varying lengths of time; both are responsible for secondary chronic conditions (12).

It is very likely that we cannot utilize many of the more bizarre attachments of the Tuberculosis Campaign, or even of the more useful methods of this work, such as the dispensary, and yet it seems to me that even the dispensary might be so modified that its visiting agents could afford the greatest service among the poorer classes by education and nursing of even so rapid and graphic a sickness as pneumonia.

Even if such adaptation seems impossible there still remain many things which stand forth with the label of neglected duty tacked upon them:

First, our neglect in educating the public on the positive knowledge we possess of the infective nature of this sickness, the means of preventing its spread, the means of raising the resistance to it—in fact, while we ourselves have known these facts for many years we have not yet grouped pneumonia in the public mind with our other reportable and preventable diseases.

Second, our present methods of handling such patients in hospital wards without segregation of patients and utensils, and without special instruction on its infective nature to our students, house officers and nurses, are most responsible.

This is the more striking in that we have totally excluded tuberculosis, a less infective disease, from our general hospitals, where, as a matter of education, it properly belongs in specially constructed wards, and have retained pneumonia, which is more infective, mainly because the patient is so unable by reason of his severe illness to exercise any precaution. I trust the day will soon come when the constant shutting out from our general hospitals of each malady as it comes into the limelight as a preventable disease will cease, and that we will make proper provision for all classes of cases, so that those who receive instruction in these institutions—nurses, students, doctors and the public—will have the full benefit of the knowledge generated there. So long as we persist in the lopping system of the past few years, and send out such partially trained members of the backbone of our public health restrictions, so long will we fail in our desired end, and our hospitals will become more and more great surgical amphitheatres.

As a plan of procedure, then, I would suggest first of all the proper segregation of pneumonia patients and their utensils in hospitals; cleaning by sprays and washes of the noses and throats of all who nurse and come in contact with these patients; careful

hand washing of nurses and attendants after handling; careful destruction of sputum and other discharges; sterilization of linen of patients; fumigation of rooms after occupancy; and the use of gauze, which can be burned, instead of handkerchiefs. This will be the centre of the educational crusade.

Second. Attached to our dispensaries certain nurses who have received special instruction on nursing and preventing the spread of pneumonia, to be sent to all pneumonia cases in home nursing work.

Third. The reporting of all such cases to the health department governing the district where the disease exists, and the fumigation of the quarters in which the disease has occurred by the department after the death or recovery of the patient.

Fourth. The instruction of the public by pamphlets and school lectures on the necessity for keeping the noses and throats cleansed, especially during winter months; the necessity for controlling the dust of streets by better sprinkling and night sweeping; the evils of bad ventilation in house, public building and school; of alcohol; of badly cooked and poor food; of lack of rest; of worry; of the handkerchief; of the bearing of spitting on pneumonia as well as other diseases; of the increased resistance generated by open-air sleeping; and similar knowledge. This, I am sure, can best be engrafted on the child's mind rather than on that of the adult.

I have merely sketched to you the outline of preventive measures which are demanded by present positive knowledge of a disease for which we have no cure, and which is at present our most mortal enemy.

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3. *Ibid.*, pp. 80 and 93.
4. *Ibid.*, p. 95.
5. *Jour. Inf. Dis.*, 1907, Vol. IV., No. 3, p. 6.
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7. *Jour. Inf. Dis.*, 1911, Vol. VIII., No. 3, p. 315.
8. *Jour. Exp. Med.*, 1911, Vol. I., p. 22.
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10. Report of N. Y. Commission on Respiratory Diseases, 1905, p. 17.
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**THE ONTARIO MEDICAL ASSOCIATION. THIRTIETH
ANNUAL MEETING, NIAGARA FALLS, 30TH AND
31ST MAY AND 1ST JUNE, 1911**

The Association met at 10 a.m. on Tuesday, 30th May, 1911, for the purpose of registering members. The meetings throughout were held at the Clifton House.

At 2 p.m. the President, Dr. H. R. Casgrain, of Windsor, delivered his address. (See page 399.)

SYMPOSIUM ON APPENDICITIS.

PATHOLOGY WITH LANTERN SLIDES.

N. T. Maclaurin, Toronto.—Researches by Ashof on 1,000 cases showed this disease to be commonest between the ages of 10 and 40 years of age; cases occur before and after these ages, but the chances decrease as the patient gets older. Males are affected twice as often as females. Increased blood supply from the appendiculo-ovarian artery probably accounts for this.

Heredity does not play any part in the causation of the disease; according to some authorities occupation does not predispose to appendicitis; it may be brought on by fatigue, irregular meals, and exposure to cold, causing congestion of the organ; it can also be caused by strains, violent purgation, and blows over the cecum; foreign bodies do not seem to be of much importance as a cause, although bristles, hairs, bits of lead, sand granules, and worms, etc., have been found in the diseased organ. The shape is very important, as kinks and bends may cause congestion or obstruction to the onward flow of its contents. The presence of feces, rather than being a cause, may prevent infection by protecting the glands of Lieberkuhn and the mucous membrane. Fecal calculi are formed in the appendix itself and contain mineral salts; these cause desquamation of the cells and an increase in the number and virulence of the organisms. The calculus *per se* is harmless; some say it causes the inflammation, while others state that the inflammation causes the calculi. By occluding the lumen, irritating the mucous membrane, and increasing the virulence of the organisms, they may cause appendicitis; on the other hand they may prevent perforation by keeping back internal pressure from the apex. The micro-organisms oftenest found in the early acute cases are the streptococci and bacillus coli communis; one investigator states that in 90% the *b. coli communis* and 50% streptococci were found.

The little emboli found in the vessels of the removed organ, the so-called hematogenous cause, according to Ashof, are due to trauma while removing the organ.

Appendicitis is caused by: kinks and stenosis keeping up congestion; fecal matter, concretions, tumors (rare), foreign bodies, etc., block the lymphatics, cause hypertrophy of the organ and a deepening of the grooves; this in turn causes an increase of mucus that forms pabulum for the invading organisms.

SURGICAL TREATMENT.

H. A. Bruce, Toronto.—Operation is the only safe and sure cure; the so-called medical treatment may give temporary relief, but a recurrence is liable to occur at any time, and maybe at a time most inopportune to the patient, when he may be far away from good surgical treatment; even in mild cases we get abscess formation, which is only cured by operation.

Appendicitis may be divided into acute and sub-acute classes, the acute being again sub-divided into: (a) Simple acute; (b) With perforation; (c) With gangrene; (d) With localized abscess; (e) With general peritonitis; (f) The acute fulminating in which there is no time for adhesions to form and we get a general septic peritonitis.

The simple may be cured by the so-called medical treatment: ice bag, rest, abstinence from food, etc. The danger, however, is in the occurrence of a future attack. There is no mortality in early operation in these cases; the danger is not so great as in delay. For acute appendicitis the treatment is removal at the earliest possible moment; there is no time limit as a general rule—judge each on its own merits. Early operation is the best of all; do not wait for a more favorable opportunity, we do not know what is going on inside, we can only guess at the pathological condition, we may not get abscess formation nicely walled off, but general peritonitis may follow. Nature provides antibodies to combat the infection, rather than trust to the uncertainties of nature, we prefer opening the abdomen, walling off with gauze as a protective, remove the source of infection, and thus assist nature and prevent complications. The best incision is along the outer border of the right rectus muscle; for early operation a small incision is best, a long one is certainly harmful; the gridiron incision leaves a strong abdominal wall, and we can drain here without fear of a hernia.

In case of acute fulminating, open the abdomen, remove the appendix, and drain with two drains, one in the pelvis and one in the appendix region; rubber tubes may cause ulceration of the bowel and set up a faecal fistula; better not to use them at all, but use cigarette drains instead; if, however, rubber tubes are used they should be removed within 24 hours.

One cannot emphasize too strongly the importance of Fowler's position for drainage in these cases.

NON-SURGICAL TREATMENT.

R. D. Rudolf, Toronto.—Some say always operate; others say never operate except in case of pus formation. Until recent years the treatment was entirely medical, and in those days of up-to-date surgery we find that the death rate from appendicitis constantly on the increase; in England in 1901 the reported deaths from this disease were 1,244; in 1902, 1,485; in 1903, 1,729. In Ontario in 1898 there were 384 deaths reported, while in 1908 there were 429.

It is only fair to judge the results of the general treatment of any disease by its death rate; for example, since the introduction of diphtheria antitoxin the death rate has been greatly reduced, while since the general treatment of appendicitis has been surgical the death rate has greatly increased, as shown by the above figures. This increase in death rate may be the result of:

- (a) An increase in the prevalence and virulence of the disease.
- (b) More or less complete abandonment of the medical treatment.
- (c) Surgery as operated to-day not in skilled hands.

The tendency nowadays is for the physician to temporize and not to use the recognized forms of medical treatment.

As soon as you have recognized the disease, start the following treatment:

- (i.) Absolute quiet and rest.
- (ii.) Prohibit water only in sips; absolute prohibition is best.
- (iii.) No purging on any consideration.

Relieve thirst by giving normal saline per rectum; for vomiting use lavage; purging causes perforation; Munyon tersely puts it: pain—aperient—perforation. Oshner says give no cathartics whatever. There will be no perforation if there is no aperient or anything else given by mouth; purgation usually spells perforation; absolute starvation and the use of opium freely; it lessens the suffering and stops peristalsis. If the pain is not too severe we omit the opium and apply heat or cold, but not both alternately as this sets up peristalsis. Treat even suspicious cases this way omitting the opium as it masks the symptoms. Many practitioners see cases clear up in a few hours under this treatment. The advisability of operation depends upon whether skilled surgery is available or not. The severity of the

case may be estimated by the leucocyte count, the pulse and temperature. With temperature 99, pulse 96 and leucocytes 14,000, the condition is probably catarrhal, while if the pulse, temperature and respirations are high and the leucocyte count low look out for general peritonitis. Give opium enough to keep the patient comfortable, avoid long journeys to a hospital or any unnecessary movement of the patient. Oshner says: Feed entirely by enemata, positively omit food by mouth, give absolute rest, salines per rectum for thirst, in every case too early for late and too late for early operation even in perforative and gangrenous appendicitis, and remove them later. He reports a death rate of 2.2 per cent. in a series of 1,000 cases all treated in this way.

Dr. Cruickshank, of Windsor, made the following pointed remarks: To say that operation is the only treatment of appendicitis is absurd. Where operation is fashionable the death rate is enormous. Ordinary medical treatment, including purges, is worse than surgery. From 25 per cent. to 75 per cent. of the human race have had appendicitis, and therefore these all require operation.

In Boston and New York, where the operation is fashionable, the death rate is much higher than in Vienna.

Purgation is absolutely bad treatment.

There is no specific treatment for appendicitis.

We use common sense instead of drugs.

The appendicitis exists from 2 to 7 days before the onset of pain.

When asked what he would do if he had appendicitis, he said: I would have an operation if (i.) the pain is real severe; (ii.) enough attacks to be a nuisance; (iii.) abscess or perforation; (iv.) chronic stomach trouble.

ADDRESS IN MEDICINE.

Dr. Thomas B. Fitcher, Baltimore, gave the Address in Medicine. He chose for his subject "The Relationship Between the Ductless Glands and Carbohydrate Metabolism."

He took up the functions of the pancreas, the adrenals, the thyroid, and the pituitary glands. The opinion was expressed that we must still adhere to the view of Bernard on the glycogenic function of the liver. When a person takes a meal that is rich in carbohydrates, the liver acts as a storehouse, and the amount of glucose in the blood is thus kept down to normal limits. The amount of glucose in the blood ranges from 1 to 12 per cent.

With regard to the pancreas it must be said that the Islands of Langerhans are really ductless glands embedded in the pancreas. When these are destroyed diabetes has been known to ensue. In this respect the work of Opie is very valuable. On macroscopic examination the pancreas may appear normal, but minute study of it will show that these islands have undergone degeneration. In 1904, Otto Conheim found that a combination of pancreatic and muscle juices was capable of converting glucose in carbonic gas and alcohol. He came to the conclusion that glucose is metabolised by the muscles when pancreatic juice is produced in normal amount and quality.

The thyroid gland plays an important part in the final disposition of carbohydrates. When the gland is too active the tolerance for carbohydrates is reduced, and glycosuria may result. In the opposite condition of hypothyroidism, or myxedema, glycosuria is very rare, if not unknown. The recent work done on thyroid proves that it definitely influences carbohydrate metabolism. This explains the occurrence of glycosuria in Graves' disease.

With regard to the adrenals, it was shown by Blum that the injection of an extract of adrenalin caused diabetes. It has also been shown that this substance in the adrenals is antagonistic to that from the pancreas. When adrenalin dilates the pupils, it has been noted the pancreas is at fault, and there is likely to be present diabetes.

The pituitary gland has a very marked influence in giving tolerance to carbohydrates. When the gland is removed the animal dies because of its inability to metabolize carbohydrates. This regulating influence of the pituitary lies in its posterior lobe. The injection of pituitary extract causes regularly glycosuria. When the gland is removed the animal can tolerate large quantities of carbohydrates.

EVENING SESSION.

THE RELATION OF LABORATORY WORK TO MEDICINE.

Dr. Norman N. Harris, Professor of Bacteriology, University of Chicago, gave his paper on this subject. He commenced by pointing out that at one time medicine was held in the clutches of superstition; at another by religion. Then, later, by a metaphysical school, and now by true scientific workers. This study was very fascinating, and during the history of medicine from time to time there were important discoveries made. The recent developments of the sciences had aided very much. Of all the

factors that entered into the progress of medical knowledge none took a higher place than that of the modern laboratory. We have not yet fully realized to what an extent the laboratory has revolutionized the science of medicine.

The laboratory, in the first place, is where inductive method of imparting knowledge finds its place; in the second place, it's where the student receives his best mental discipline; thirdly, it represents applied science; and, fourthly, it is where the research work is being done.

The laboratory has now taken the place of the older method of teaching by didactic lectures. Lectures have their value, but are quite subordinate to this more practical teaching. In the laboratory the student receives his best training along the lines of close observation, and the application of science to medicine.

The most important role played by the laboratory is in the field of research work. It is the great testing shop of ideas and theories. The German ideal that the true physician must be both a genuine clinician and a thorough expert in laboratory methods is the correct one. The tendency of the present day is quite clear that the clinician of the future will first receive a thorough training in the scientific workshop of medicine—the laboratory. This does not mean that the great work of the clinician is under-valued, but the ward must be aided by the laboratory, or indeed become a sort of clinical laboratory. This change will create men of better thought and greater power.

PUBLIC AND PROFESSIONAL ASPECT OF THE PNEUMONIA QUESTION.

By Dr. William Charles White, Medical Director Tuberculosis League, Pittsburg, Pa. (See page 403.)

THE RECEPTION.

After the reading of these papers the president, Dr. H. R. Casgrain, gave a reception for members and guests in the ball-room of the Clifton Hotel.

After the reception there was a smoking concert in the Convention Hall.

SURGICAL SECTION.

On Wednesday morning, 31st of May, and Thursday morning, 1st of June, a number of papers were read and discussed.

“Aids in the Diagnosis of Surgical Diseases of the Kidney and Bladder.”

Dr. J. K. McGregor gave a paper on this subject. He paid special attention to the information that could be gathered from

the direct examination of the parts. The X-ray and the cystoscope are now of the utmost value in revealing certain conditions. The X-ray will show stones in 90 per cent. of the cases. The cystoscope, however, is the most important means of diagnosis. A general anesthetic is rarely required. A hypodermic injection of morphia gr. 1-2 before the examination is useful. Alypin, in tablets of gr. 11-8, several being applied to the urethra, novocaine, or cocaine in 20 per cent. solution are also required sometimes.

The patient is placed on the back, with the hips slightly raised. Thorough antiseptic precautions are taken, both with the patient and the instruments. The cystoscope will reveal the presence of a calculus. The cystoscope is of the utmost value in diagnosing sarcoma, papilloma and carcinoma. It has been held that 90 per cent. of tumors in persons over 50 years of age are malignant. This is the view of Young, of Baltimore and Mayo, of Rochester. Some other authorities regard most of these growths as benign. As so many of these tumors are malignant it is best that the cystoscope be used early so as to settle any doubt there may be.

The meatoscope is of much value in clearing up certain conditions to be found in the anterior portion of the urethra.

The presence of pus or blood in the urethra should be noted. The catheterization of the urethra is fairly easy in a normal bladder. There may be considerable difficulty in cases of cystitis, as the parts may be drawn out of position, or hidden behind an elevated tubercle.

There may be obstruction of the urethra from stone or growths or tubercle. By means of the cystoscope the output of each kidney can be secured separately. When there is a hydronephrosis the fluid comes fast at first and then slower. In the normal kidney pelvis the fluid comes in jets. The normal kidney pelvis will contain 7 to 15 c.c. If it contains 25 to 40 c.c. there is likely some nervous disorder. If there be 50 to 150 c.c. there is hydro-nephrosis. If there be more than 150 c.c. the case will usually require nephrectomy.

The functional action of the two kidneys may be determined by various tests. Of these cryoscopy, the injection of indigo carmine, gr. 0.16 in normal salt solution into the gluteal muscle, and the phloridzin test, may be mentioned. Pyelography is a useful means of diagnosis. The patient is cystoscoped and a ureteral catheter passed, and a 5 to 15 per cent. solution of collargol injected slowly, while the radiograph is being taken.

The X-ray is of value in determining between conditions in the kidney and external to it, as gall stones.

A SHORT TALK ON THE SHOULDER, HIP, WRIST AND ANKLE.

Dr. McKeown, Toronto, took up this subject. Many cases of dislocation of the shoulder joint are unrecognized by the ordinary man. There is only one sure and certain way of diagnosing a dislocation of this joint, and that is by ascertaining the position of head of the humerus. Normally, it is situated external to the acromial process, if it is anywhere else it is dislocated. The reduction by Kocher's method is not always satisfactory, it is much better to rotate the arm externally very slowly, taking about five minutes to do it; then it will slip in very easily when the arm is brought across the chest with the elbow flexed.

Colles' Fracture.—The impacted form is often hard to recognize, and if unable to be broken down easily it is far better left alone. Some do better who never see a doctor, but simply put on a splint without any manipulation of the arm. A good way to reduce this fracture is first to bend the wrist away back, using a fair amount of force; then it will be comparatively easy to slip it back to its right place. Once it is set there will be a great deal of difficulty in getting it out again. A splint is unnecessary to retain the fragments in place, in any case a splint should not be kept on longer than ten days. Early manipulation of the wrist joint is very desirable.

Hip Fracture.—The important signs of fracture of the hip are crepitus and shortening; never look for crepitus, as it always causes greater injury, and may break down a slight impaction that may be present. It is impossible to differentiate between an intra and extra capsular fracture, and it does not matter, as the treatment of both forms is the same. Look at the iliofemoral crease, if it is abolished more or less on the affected side due to the effusion into the joint it is a pretty sure sign of fracture. Luckily, impaction usually occurs, therefore never manipulate, as we are nearly sure to get a poor result in unimpacted cases. Even if the toe is very much everted, leave the position alone; better to have a leg that will carry weight than a weak one with a nice position.

Pott's Fracture.—The pain in this fracture is due to:

1. The foot being too far back.
2. The foot being too far up.
3. The astragalus pressing on the internal lateral ligament by eversion of the foot.

The joint should be moved three or four days after the acci-

dent, and every day afterwards, one cannot displace the bones in this way; the patient should walk in three or four weeks. Put up the foot in an over inverted position, using a Dupuytron's splint.

OPEN METHOD OF TREATING FRACTURES.

Dr. F. N. G. Starr, Toronto, gave a series of lantern slides, showing the results of the open method of treating fractures; the series included fractures of the humerus, head and shaft; the olecranon; radius and ulna; femur, head and shaft; and the tibia. In cases of a fracture of the leg it is only necessary to plate the tibia as the fibula will then come into position and remain there. The results obtained had been most encouraging; a noteworthy fact was the absence of all pain as soon as the ends were brought into apposition and kept there; he told of one case in which he plated the shaft of the femur and the patient walked out of the hospital in eight weeks; in every case the results were obtained sooner than is got by the splint treatment. One has to be sure of asepsis, and the rest is easy.

Dr. Wilson, Niagara Falls, said: Plating is the best means of getting excellent results, especially of the thigh and oblique fractures of the tibia and fibula; pain is relieved at once by perfect apposition of the fragments.

Dr. Primrose, Toronto, said: The important thing is thorough asepsis, and then ordinary skill is sufficient.

Dr. W. W. Jones, Toronto, said: Always give an anesthetic in the reduction of fractures, especially in children and near joints; always have a fellow practitioner present to share the responsibility; use considerable force in reducing fractures, especially of the lower extremity; we can often get good results by flexing the limb and taking away the muscular action and spasm.

This paper was discussed by Dr. T. W. E. Wilson, Niagara Falls; Dr. A. Primrose, Toronto; Dr. W. Burt, of Paris; Dr. Ross, Barrie; Dr. Warner Jones, Toronto, and Dr. Ernest Wilson, Toronto.

THORACIC SURGERY, WITH LANTERN DEMONSTRATION.

Dr. E. Von Eberts, Montreal, in his address, confined himself to the surgery of empyema, and illustrated with a number of lantern slides.

By experimentation on rabbits and dogs in Montreal it was found that by removing the pleura, part of a lung, or even a whole lung, the space was obliterated subsequently by hypertrophy of the part of lung left on the operated side, bulging of

the mediastinum and bulging upwards of the diaphragm. This is especially true on removing the lower lobe. One case was shown where the left upper lobe had been removed, and the space was obliterated by hypertrophy of the right upper lobe, and not by the hypertrophy of the left lower lobe, which was encased in a fibrous sheath and bound down to the thoracic wall. This obliteration only occurs if there is a negative pressure in the space. This is the important principle to recognize and carry out. Have a tension equivalent to or slightly less than the average intra-pulmonic tension.

The persistence of empyemic cavities is due to the pneumothorax which occurs at the time of dressing, and the greater the pneumothorax the slower the cavity is to fill up.

During inspiration we get negative pressure for a short time, and nature takes advantage of even this brief period to close up the cavity by granulation tissue and not by expansion of the lung. There is also a slight negative pressure produced when the cavity has been packed with gauze at time of dressing.

The tendency heretofore was to ignore completely this physiological principle and fact, and to make the chest wall conform to the cavity, instead of making the thoracic viscera conform to the cavity.

Several schemes have been devised to produce and maintain this negative pressure:

1. Continual pneumatic drainage is good treatment.
2. Some valvular apparatus for allowing pus and air to escape, and preventing ingress of air. There have been a number of these devised, but all are deficient in not continuing to work properly along this line.

At present there are two efficient methods:

- (a) Rib-trephining, devised by Dr. Robinson of Boston.
- (b) A special drainage tube devised by the speaker. This tube is made of rather stiff rubber, with a bend on the part to be inserted into the wound; it is conical in shape, so as to efficiently fill the wound.

The tube passes through (from within outwards) a sterile felt pad, smeared with zinc oxide ointment; this is put on the chest wall, then a layer piece of ordinary thin rubber; outside this a harder piece of rubber, all three closely fitting round the tube. This constitutes the thoracic dressing and is attached by means of adhesive plaster over the middle rubber. Outside this dressing the tube is flexible and softer and has a valve on it that can be opened and closed by means of a screw. The tube is attached to a glass bulb, and to the opposite end of this bulb is attached a second rubber tube with a valve.

Technique of Operation.—Always use local anesthesia, cocaine 1 per cent., and, if properly used, the operation can be absolutely painless, even in children.

A circular incision is made; skin flap elevated; muscles split along line of fibres; periosteum incised and flaps raised. Then a special periosteal elevator is used to insert beneath the rib; a curved one with a groove in it to hold the saw, as a saw is always used instead of bone forceps. Two or three centimetres of rib are resected. The ends of the ribs are then plugged with Horsley's wax to prevent their infection and necrosis, which always takes place in small amounts when bone forceps are used. (The necrosis may be unobserved and go off in the discharge in cases of long suppuration.)

The lower periosteum is now incised; the pleura opened and the pus escapes. As soon as air begins to go into the cavity, plug with one finger. Now the advantage of local anesthesia is shown in the assistance given by the patient in forcing the pus out of the cavity, holding his breath while you insert a finger or the drainage tube. The tube is always inserted with the inner valve closed. Then attach the glass bulb, and a Politzer's air bag to the distal rubber tube; by this means a negative pressure is established; tighten the outer valve, remove the Politzer, loosen the inner valve and the drainage is established. The glass bulb shows the kind of discharge and collects the amount. When you wish to change it close the inner valve, remove the glass bulb, dispose of the discharge (and there is no odor), sterilize and fasten up again. The tube in the wound is left for three or four days before it is changed, and then it is done constantly by having a second tube ready to insert when the first is withdrawn—the patient helping by holding his breath.

The advantage of the curved tube inside the thorax is to prevent the too rapid filling of cavity by the lung and diaphragm. It has a disadvantage, however, of causing pain by pressure on the diaphragm. Another cause of pain is pressure of the ends of the ribs on the diaphragm after three or four weeks.

Cases of acute and subacute empyema.—Of peripheral lung abscess, of pyo-pneumo-thorax with lobe of lung collapsed and its function lost by infiltration and adhesions of the alveolar walls, have been treated by this negative pressure device, and in every case the cavity has been obliterated by compensatory emphysema of remainder of lung, bulging of mediastinum heart and diaphragm, and was conclusively shown by a series of lantern slides of X-ray pictures.

In one case of acute empyema the cavity was obliterated in

thirteen days. In this class the negative pressure should be kept up for some days after obliteration of cavity in order to be sure that we have firm plastic healing. During the treatment of any of the cases use the modern hygienic treatment of fresh air and forced feeding during convalescence.

TWO CASES OF PHLEGMONOUS ENTERITIS.

Dr. L. W. Cockburn, of Hamilton, reported these cases. He referred to the statement of Moynihan that acute intestinal obstruction was one of the most urgent conditions the surgeon had to do with. He mentioned that obstruction was one of the most prominent symptoms in these two cases. In both cases an operation was performed. The diseased portion of bowel was removed. Both patients made good recoveries.

CURE OF INGUINAL HERNIA.

Dr. Robert Lucy, Guelph, read a paper on this subject. The incision should be made by beginning one inch external to Poupart's ligament and curving upwards and inwards, it is made to end at the pectineal eminence. This flap is dissected down to the muscle and turned downwards. The sac is invaginated by means of curved forceps into itself. The forceps retain a hold of the invaginated fundus and bring it out through an opening in the abdominal wall one inch external to end of wound, the skin being retracted. The sac is drawn taut, cut off and the stump dropped back into wound. Goldspohn's and Bassini's technique were mentioned. From outer angle sew external oblique to upper edge of Poupart's ligament down to point where the cord and vessels emerge over pubic bone.

BACILLUS AEROGENES CAPSULATUS.

Dr. R. H. Patterson, of Hamilton, took up the subject of bacillus aerogenes capsulatus. The characteristics of the bacillus were given. The bacillus divides by fission, but it will spore in suitable media. The gas formed by the bacillus contains 64 per cent. hydrogen and 28 per cent. carbon dioxide and burns with a bluish light. The bacillus has been found in connection with infected uteri, lungs, pleurae, meninges, and necrosing surfaces. It has also been found in connection with pernicious anemia.

A case was reported of a young man of 33 years of age, who sustained a compound fracture and dislocation of the tibia and fibula. The wound was thoroughly cleansed and a drainage left. The conservative treatment is by free incisions and injections of

peroxide of hydrogen. The safest is amputation above the line of infection.

DIAGNOSTIC VALUE OF THE CYSTOSCOPE.

Dr. George Ewart Wilson, Toronto, read an exhaustive paper on this subject. He referred to the discovery of this useful aid to diagnosis, and their varieties. For catheterization No. 22 French is employed, while for examination only No. 18. Before using the instrument one should study its use on the cadaver or on the phantom bladder. It must be borne in mind that objects are reversed in position, though now some instruments correct this. In making the examination the urethra must be made to admit a 22 French; there must be about 4 ounces of clear fluid in the bladder, and some prefer the urine if it is of average color. The patient should be given 10 grains of urotropine three times a day for 24 hours prior to using instrument, and a pint of Viehy water half an hour before. For a lubricant glycerine is preferred.

The catheter for the ureter should be a No. 7 French. The opening should be viewed as nearly as possible at right angles.

The reader of the paper gave a careful description of the interior of the bladder and the various objects that would be seen. It is now generally held that there are scarcely any conditions that contraindicate the use of the cystoscope.

A careful description was given of the various diseased appearances that would be met with, such as acute and chronic inflammation and ulceration. The examination of an ulcerated condition is of much importance on account of the possibility of tuberculosis. With regard to tumors the two varieties met with are papillomata and carcinomata.

In tuberculosis of the kidney there comes to be an irritation at the orifice of the ureter, and the patient may complain only of bladder trouble. In addition to tuberculosis the cystoscope aids in diagnosis of stone in the kidney. In all cases of blood in the urine the instrument is of much use. The paper was very fully discussed by Dr. Warner Jones, Toronto; Dr. E. E. King, Toronto, and Dr. Nagle. They gave their technique and methods as to the use of local anesthetics, etc.

THE SECTION OF MEDICINE.

This section met on the forenoons of 31st May and 1st June. During these sessions a number of papers were read and discussed.

THE PRESENT STATUS OF RADIUM THERAPY.

Drs. W. H. B. Aikins and F. C. Harrison, of Toronto, presented a paper with lantern slide demonstrations on this subject.

As a result of the experimental work done chiefly by Dr. Louis Wickham, of Paris, radium therapy has been placed on a sound and scientific foundation. During the past year many new methods of using radium have been discovered. The older and original methods by means of plaques and tubes still hold a large place, but by using small quantities of radium salts in solution injected into the tissues, the alpha rays, which form about 90% of the available radiation, can be utilized, whereas by the former methods they were practically prevented from exercising any action. The use of radio-active waters and baths has been found of great benefit in various diseases of metabolism. Radium ions have also been used with the continuous electric current, and by this means the radium can be introduced to a depth of five to nine centimetres into the tissues.

The various diseases in which radium may be of service were then discussed, some very excellent lantern slides being used to illustrate the subject. As an adjuvant in many chronic skin diseases, as eczema, psoriasis, lupus, etc., radium is invaluable. Nævi and angiomas can be made to disappear without scarring. The writers had had very excellent results with the use of radium in goitres. In the treatment of malignant disease radium has a definite place. In superficial cancers it should be the treatment of election, as practically all conditions respond well to its use. In more deeply seated lesions the procedure at present should be to combine radium treatment with surgery, radiating the field before operation, with extensive post-operative use to prevent recurrence. Statistics show that with this procedure the chances of recurrence are much diminished.

UPPER AIR TRACT INFECTIONS.

Dr. McPherson, New York, considered that this subject was coming more and more into prominence. Very many infections found their way into the system through the upper portions of the respiratory and digestive tracts. From these infections in these regions many poisons found their way into the general system.

DIAGNOSIS OF CONDITIONS CAUSING HEMATURIA.

Dr. J. J. Mason, of London, Ontario, gave a paper on this subject. Patients with hæmaturia should be examined thoroughly, both generally as well as locally. Some drugs, such as

senna, rhubarb, carbohc acid, and excess of bile pigments and uric acid in the blood, gave rise to a bloody color in the urine. The microscope would distinguish between hæmaturia and hemoglobinuria. Falls and injuries might throw light on the condition and enable one to arrive at a correct conclusion. The history of certain diseases was also of much importance. Tuberculosis, rheumatism, valvular disease, scarlet fever, septicemia, or influenza might cause nephritis and give rise to hematuria. Certain drugs could also inflame the kidneys, such as cantharides and turpentine. The general examination should be taken up first. All general and local diseases in any part of the body should be noted.

ETIOLOGY AND PATHOLOGY OF CHRONIC CONSTIPATION.

Dr. S. H. McCoy, St. Catharines, read this paper. The phenomena of passage of food along the intestines is caused by really two mechanisms. It is under the control of the sympathetic nervous system as far as the sigmoid flexure, and from thence it is also aided, or otherwise, by conscious cerebration.

Hertz divides chronic constipation into two great classes: *First*, Detention of bowel contents from the stomach to the pelvic colon. *Second*, Inability to empty all below the pelvic colon.

The *first* may be caused by:

(a) Deficient motor activity caused by poor muscle, due to senility, anemia, cachexia and constitutional condition.

(b) Obstruction.

The *second* may be caused by functional or organic depression of the nervous system, as seen in neurasthenia, tabes and senility. In fact, constipation is often one of the earliest symptoms of a nervous breakdown.

All of us have seen patients with indigestion, who imagined it could be cured by eating less; they tried it and chronic constipation developed, making the last case worse than the first. Also the food of the well-to-do is so concentrated that there is not enough residue left from absorption to produce a stool. Anything stimulating the solar plexus produces inhibition of the intestine from the splanchnic supply; the chief inhibitor being prolonged abdominal pain.

Obstruction may be caused by hard feces, having many causes, *e.g.*, diabetes, excessive sweat, deficient intake of water, etc. Kinking of bowel associated with visceroptosis and peritoneal adhesion has been regarded as cause of chronic constipation, but Hertz shows it rather to be due to weakened abdominal muscles in these cases, which act first, by not having muscles

sufficiently strong to start act of defecation; second, their laxity allows over-distension of the bowel by gas, and thus weakening the bowel.

Nerve bankruptcy, by causing loss of muscle tone, may be a cause and not a result of the disease.

As to adhesions, Mollisin, Cameron and Virchow find intestinal adhesions at nearly all autopsies, and yet no chronic constipation in the living subject.

Arbuthnot Lane considers these adhesions and bands as cause of many cases. On this belief he has perfected his operation of short circuiting the intestine and doing away with the function of the colon.

Loss of reflex action and dilatation of lower part of colon are both usually produced by disregarding nature's call to defecate; laziness, pressure of business, false modesty, fear of pain from hemorrhoids or fissure, etc., are responsible for the procrastination. Resistance of each subsequent call makes the call weaker and weaker, until a person can go around with the rectum loaded for days without the desire to defecate returning.

Bowels can be trained very accurately to habits of regularity, and if allowed to carry out their function will do so without trouble.

Obese people who lead a sedentary life are very prone to chronic constipation, not always on account of weak abdominal muscles, but because of fatty infiltration in the muscles of the bowel, causing slow passage of feces. Constipation found in enteroptosis is due to weak abdominal muscles and not to kinking of bowel. Anything affecting the relaxation of the diaphragm, *e.g.*, emphysema and asthma, tends to produce constipation, and lastly, constipation is produced by spasm of the sphincter ani, caused by anal ulcer, hemorrhoids, fissure or neurasthenia. This is benefited by stretching.

THE TREATMENT OF CHRONIC CONSTIPATION.

R. D. Rudolf, Toronto, took up this topic. Chronic or habitual constipation is perhaps the most common ailment to which mankind is subject.

Some people have a gloomy outlook on any day in which the bowels do not move, and if this function has been satisfactorily performed the outlook is bright accordingly. If, however, they should chance to forget the omission they feel no ill-effects. We conclude therefore that the result is largely psychic.

For this condition the laity resort very largely to medicines,

but lately there has been a great wave of opinion against this wholesale purging, and some physicians declare that practically all cases of chronic constipation may be permanently cured by psychic means alone. Dr. Lyon, of Buffalo, two years ago reported 68 cures out of 69 cases.

Normally the bowels should move once daily; there is no strict rule to this effect; some people are in good health whose bowels move only every second or third day; others need two daily movements to keep healthy.

One might define chronic constipation as a state in which the bowels move less frequently and thoroughly than is the custom of the individual under consideration.

A NEW FUNCTIONAL TEST FOR THE KIDNEY BY THE PHENOL SULPHONE PHTHALEIN TEST.

Drs. L. G. Rowntree and J. F. Garaghty, Baltimore, contributed this paper. It was read for them by Dr. H. A. McCallum, of London.

The chemical composition of this substance is very complex; it is one of the derivatives of phenolphthalein, is easily soluble, is alkaline, is non-toxic to the tissues, and is excreted by the kidneys very rapidly; it begins to appear in the urine from three to ten minutes after being taken, and within two hours from 60% to 85% is recovered.

When it is excreted slowly or in small amounts we suspect chronic interstitial nephritis; if none is excreted we suspect the near onset of uremia, and give a grave prognosis, even if there are no clinical symptoms of a uremic condition. Two cases were cited in which this test was tried and denoted a serious kidney lesion, although there was not a single clinical sign or symptom pointing to any kidney trouble: one of these died the same night from uremic convulsions, and the other from the same cause one week afterwards. It gives an accurate idea of the *amount* of destruction of the kidney. The amount of the drug excreted and the time taken before it appears in the urine are the important points. One can give a definite prognosis—good if the amount and time are normal, bad if otherwise. One can also tell if a given kidney lesion is purely cardiac or due to Bright's disease; in the former the output is fairly normal, while in the latter cases there is a deficiency in amount as well as delay of time in appearance. It is a much better and more reliable test than blood pressure.

It is a very valuable test in surgery, before undertaking an

operation this test should be made. In cases of urinary obstruction, where there are casts in the urine, the output of urine and urea may be normal, and no serious kidney lesion present, and therefore no contra-indication to operation; on the other hand, there may be no casts discoverable in the urine and yet a serious kidney lesion may exist. In cases of slight lesions we can test repeatedly, and thus tell whether the condition is getting better or worse; we can, therefore, select the time of operation; never attempt to operate if the drug is not secreted well.

Every practitioner cannot have a sample of urine tested in a well equipped laboratory to tell the amount secreted in a given time, yet there is a very simple way in which one can tell roughly and fairly accurately the amount excreted:

Take, say, twenty minims of a solution of phenol sulphone phthalein of any strength, it does not matter how strong; inject it into the patient either subcutaneously or intravenously, and collect all the urine passed for the next two hours; put a definite quantity of the urine (10 cc.) in a test tube and half fill the test tube with water, adding a few drops of sodium hydrate solution to make it alkaline. Then put twenty drops of the same phenol sulphone phthalein solution in a second test tube of the same size as the other, add water so as to have an equal quantity in each test tube; now compare the colors of the two test tubes, if of about equal densities then the secretion of the kidneys is good, if the color in the one containing the urine is about one-third as deep in the other, then we know that there is some lesion of the kidneys whereby they are only doing one-third the work they should be doing. Now, if we want to find out which kidney is affected most we simply do ureteral catheterization and test the urine from each side.

CONCLUSIONS: It is of great value in diagnosis and prognosis in nephritis; it shows the degree of the trouble; in cardio-renal trouble, it tells whether the heart or the kidney is most at fault; it shows impending uremia even when there are no clinical symptoms present; it tells when to operate and when not to operate; it tells whether the condition is unilateral or bilateral when separate catheterization is done; any person can do the test without any elaborate apparatus at the bedside.

OUR RESULTS WITH "606."

Dr. Campbell, Montreal.—Report of 128 cases with 165 injections.

As to the method employed; the first 19 were given in an alkaline solution by the intramuscular injection; this was very

painful and was abandoned mainly for this reason. The next 10 or 11 were given intramuscularly in a neutral solution; this was not quite so painful afterwards, but the results were not so good. All the others have been given intravenously.

The apparatus used is simplicity itself; it consists of a small glass funnel, holding three or four ounces, about three feet of rubber tubing in two pieces, joined by a glass tube to enable one to see that the fluid is flowing; and an ordinary aspirating needle of size to suit the vein.

Mix the solution according to printed directions; it is very important to have the needle into the vein before giving the injection, as the fluid in the tissues around the joint causes intense pain. The dose given is always 0.6 gram.; he gave larger doses in one or two cases, and in cerebral lesions the dose is smaller. No matter what the result, he always gives a second dose wherever possible within six weeks of the first. The more sclerotic the sore the longer it takes to heal; healing depends on the free flow of lymph.

The dangers of intravenous method are:

1. Sepsis. This should easily be prevented by adhering strictly to the rules of aseptic surgery.

2. Embolism of air or particle of precipitate: this is not a serious one; an air bubble that may get through the needle is so small as to be of no harm in the blood stream and is readily absorbed; the speaker saw several particles of the precipitate get into the vein with no untoward effects.

After effects: Some showed no reaction at all; some were very sick for three or four days afterwards; most are sick for a couple of hours, and are all right in the morning; nausea and vomiting were seen in every case where food was taken within two hours after the injection; many will have a rigor and chill for one hour, sometimes with headache and diarrhea; herpes was noticed in quite a number of cases, labial generally, one case had herpes zoster; in four cases jaundice developed three or four weeks afterwards.

Objections to this method: The only objection is the rapid elimination of the arsenic, the arsenic disappears from the urine about ten days after the injection, while intramuscularly we get arsenic in the urine three or four weeks after, and it persists in the muscle for months and is apparently not absorbed.

Advantages of the intravenous method: 1. It is easily done and cleanly given; 2. There is no pain and therefore no difficulty to get the patients to submit to a second injection; 3. We get

the effect of the full dose of the drug, and at the shortest possible time.

Results obtained: Those with intramuscular injection gave as good results as is now got by the intravenous method. With the neutral suspension the results were not as good and the lesions disappeared more slowly. Intravenously the results were spectacular, the lesions and spirochaetae disappeared with remarkable rapidity.

Recurrences: There were three recurrences in the intramuscular series, two of these were cases of secondary syphilis, one of which, after four months, showed an atypical rash, which disappeared on giving a second injection; this rash looked like a rosacea, was extremely itchy, and deceived the dermatologists. The 11 cases of neutral solution gave four recurrences; one of secondary in a week, and one of congenital after three months; this one was given an intravenous injection, and still there was a recurrence. With this exception, there was no recurrence after intravenously given.

In this series there were primary, secondary, combination of both, tertiary, congenital, locomotor ataxia, cerebral and eye cases.

There seems to be a greater tendency to pigmentation than when mercury is the treatment.

Does 606 kill spirochaetae? Yes, shown by their disappearance and by the absence of the Wassermann reaction. The spirochaetae changed in two or three hours afterwards; they become less lively and some are broken up. By the next day most cases showed none, in a few instances they were present for 48 hours; this does not include the recurrences.

Does it cause any other danger? In the literature there is one death reported—that of an adult who was given the intravenous treatment. There was no death in his series.

The effect on the Wassermann reaction is a marked weakening in every case, and sometimes it disappeared in seven or eight weeks.

Does it cure syphilis and prevent recurrence? Time only can tell. It must be judged only by a series of intravenous injections with the maximum dose. In his series there were two who returned some time afterwards with a primary sore—a re-infection.

What is the need of mercury with "606" It should be used, as we have not a sufficient knowledge yet as to the permanent value of "606." The objection to this is that we will not be able to tell if the results are due to the mercury or to

the "606." There will be, however, many cases where mercury will not be taken from which we may get statistics of the value of "606." If it only kills the spirochaetae it is indeed a very useful remedy.

Dr. A. McPhedran, Toronto, stated that his experience was limited to a rather small number of cases, and the results of these did not make him very strongly impressed with the efficacy of the drug.

Dr. G. W. Ross, Toronto, cited two cases in which there was clotting of blood in the veins on attempting to give "606"; one of these was given citric acid for a while, to lessen the coagulability of the blood, and a second injection was given successfully subsequently.

Dr. R. A. Gordon told of two cases which showed alarming signs of shock and collapse immediately after the injection; it lasted for half an hour, and then the patients felt all right.

Dr. W. B. Thistle told of trying it in two cases of pernicious anemia: in one he gave two doses and the red blood count had increased from 1,300,000 to over 3,000,000, and the hemoglobin improved in proportion. The other case had only one injection, and showed some improvement.

One man stated that if the hypodermic needle was washed in normal saline solution or sterile water before being injected, and washed out before being withdrawn, it would minimize the pain, as the greater part of the pain was caused by the irritation of the drug.

Another stated that the medical profession should drop the name "606" and somebody else said that the name "Salvarsan" was just as objectionable, as neither meant very much; better use the name "Arseno-Benzol."

Dr. Strathy, Toronto, said that in his experience with the Wassermann reaction it disappeared in some cases after giving "606," while in others it was present after but not before the injection.

THE BIOLOGICAL ASPECTS OF TUBERCULOSIS.

Dr. A H Caulfield discussed in his paper a number of the recent views on the immunity in this disease and the relationship in the various types of the bacilli. It was stated that patients may reach immunity along different biological paths. Attention was directed to the marked variations in the clinical course in many cases. The subject of the tuberculin test was gone into and reasons given for positive and negative results. The reactions that occurred in the antigen serum combination were carefully

considered. The topic of opsonins was then taken up. This was followed by some remarks on precipitants.

THE EARLY DIAGNOSIS OF PULMONARY TUBERCULOSIS.

Dr. F. C. Neal, of Peterborough, introduced this subject in an able paper, to be published in extenso in next issue.

THE FUNCTIONAL ACTIVITY OF THE HEART.

Dr. V. E. Henderson, Toronto, gave his paper on this. He went over the recent work that had been done on the heart and referred to his own. He called attention to the five properties of the heart muscle, namely, irritability, rhythmicity, contractility, conductivity, and tone. The various theories governing these were mentioned. Much attention was paid to the importance of tone and its bearing on the causation of murmurs. Disturbance in conductivity would cause such a condition as Stokes-Adams' syndrome.

CAUSE OF INCREASED HEART RATE IN FEVERS.

Dr. V. H. K. Moorhouse, Toronto, offered a contribution on this question. The increased temperature of the blood acted in two ways, locally on the heart and through the nervous system. Increased respiratory activity will lessen the quantity of carbon dioxide and accelerate the heart's action. There is no good reason for believing that toxins cause increased heart action, apart from the fever they give rise to, which has been already shown to stimulate the heart.

SERUM TREATMENT OF PNEUMONIA.

Dr. J. H. Duncan, of Chatham, gave his experiences with this treatment. He had employed Stearns' pneumolytic serum in thirty cases. The conclusions arrived at are: (1) The early use will produce prompt relief and almost certainly lead up to a rapid recovery; (2) that badly complicated cases will derive much benefit; (3) no bad results have been noted so far from the urticaria or rheumatic pains; (4) that the serum method of treating pneumonia is worthy a much more extensive trial than it has received.

CAUSATION OF BRONCHIAL BREATHING.

Dr. George S. Young, Toronto, read his contribution on this subject. Some remarks were made on vesicular breathing and its causes set out. Some held that it was merely a modified laryngeal sound; others that it was produced by a rush of air into the alveoli. In the case of bronchial theories of local causation they have not had much support. Highness or lowness of sound is

due to the length of tube involved. The consolidation may not stop the tubes, and so the conductivity of the sound is increased. If the consolidation is complete no air passes along the tubes, but only over their openings. In this case an entirely different sound is heard.

SECTION OF GYNECOLOGY, OBSTETRICS AND PEDIATRICS—FORE-
NOONS OF 31ST MAY AND JUNE 1ST.

POST PARTUM HEMORRHAGE.

Dr. Robert Ferguson, London, set out in his paper what was sometimes a very grave condition and would prove a tax upon the resources of the practitioner. There were two main causes, injuries during labor and failure of the uterus to contract. The latter might be caused by frequent child-bearing, syphilis, prolonged and deep anesthesia, non-use of ergot, over-stimulation of the uterus, and too much compression of it.

It is to a great extent a preventable condition. The causes point to the preventive measures likely to yield the best results. Any debility must be treated. Proper measures taken if syphilis be present. For the early pains of labor a hypodermic injection of morphia is much better than any other agent. As a stimulus to the uterus quinine in solution is valuable. Another cause for hemorrhage is allowing a patient to become greatly exhausted by a long labor that should be terminated by proper assistance.

In the treatment of hemorrhage there should be made firm and steady manual pressure. A one per cent. hot iodine douche, vaginal or uterine, may be given. If hemorrhage still persists, a gauze packing may arrest. Forceful antelexion of the fundus upon the cervix will at times succeed. Compression of the abdominal aorta above the level of the fundus.

DIAGNOSIS OF EXTRA-UTERINE PREGNANCY.

Dr. James A. MacLeod, of Buffalo, reported two very interesting cases. He went fully into the diagnosis of the condition. He held that it was impossible to distinguish the several varieties until the abdomen was opened. In classic cases the diagnosis was comparatively easy, but in irregular cases this was difficult. As the fetus grows the pain becomes more or less constant, the uterus is pushed over to the other side. If the fetus lives the conditions remain and increase. During the course of an extra-uterine pregnancy the endometrium is converted into a membrane that is shed when the extra-uterine fetus dies or is removed. The hemorrhage that takes place may vary greatly

from a small to a fatal amount when rupture occurs.

In the diagnosis one must keep in mind appendicitis with abscess, salpingitis with abscess, as the two conditions that may give rise to most confusion. If there be a pelvic abscess the laboratory methods of settling the presence of pus should be had recourse to. In all cases of abscess the careful study of the history will throw much light on the true nature of the case.

In extra-uterine pregnancy the onset of the symptoms is very gradual. It is not likely to be confused with appendicitis or pelvic abscess until the occurrence of abortion. Following the hemorrhage, if marked in amount, the patient is in a state of collapse, with alteration in temperature and pulse due to shock. When the reaction sets in and the pulse becomes fuller and slower there may be distinct rise of temperature caused by the absorption of fibrin ferment. This may subside, or the pulse and temperature may remain above normal, when it is due to infection of the blood clot. On the death of the fetus the uterine discharges may acquire a distinct odor.

In endometritis there is cell infiltration, but this differs from the condition of the endometrium found when a pregnancy exists in a tube. The microscopic findings are of much value as an aid to a correct diagnosis.

When rupture and hemorrhage have occurred there will be a leucocytosis, which must not be confounded with that found where an abscess may exist. When a hemorrhage occurs in addition to the leucocytosis there is a marked decrease in the red corpuscles.

TREATMENT OF EXTRA-UTERINE PREGNANCY.

Dr. W. Krupp, of Woodstock, covered this topic carefully in his paper. He mentioned that ovarian pregnancy was a rare occurrence. Fertilization usually takes place in the tube. The cause for the non-passage of the ovum into the uterus is not fully settled. The ovum may die in the tube, causing a tubal mole. The causes of rupture are varied. The rupture may be intra-tubal or extra-tubal. The former is merely a rupture of the capsule enclosing the embryo. The extra-tubal variety may be intra or extra-peritoneal.

In cases of diagnosis before rupture an operation should be performed. In cases of rupture with bleeding and shock it may be necessary to wait an hour or more and give morphia per hypodermic method. As soon as shock abates, operate. The foot of the bedstead should be elevated and the arms and legs bandaged to keep blood in the vital organs. Strychnia gr. 1-40 may

alleviate the shock. Adrenalin chloride 1 in 1,000 in doses of 20 to 30m. may be injected. Saline injections may have to be given.

In those cases where the shock and collapse is extreme to operate would be fatal. One must wait for reaction. By carrying out the foregoing treatment the crisis may be overcome.

In all cases where the shock has passed off the operation should be performed as soon as possible. The technique of the operation was briefly described.

INFANTILE ECZEMA.

Dr. Moorehouse, of London, read an exhaustive paper on this subject, in which he set out the treatment fully and gave a number of very useful formulae. Among the causes should be mentioned the direct and exciting action of germs, the internal and constitutional, and those due to local irritants.

In the treatment attention must be given to remove all sources of local irritation. The local treatment must be carefully selected to suit each case, and the child must receive careful internal and hygienic treatment.

TORSION OF THE PEDICLE OF OVARIAN CYST.

Dr. E. R. Secord, Brantford, gave the history of an interesting case. The patient was pregnant and passed successfully through her accouchement. She was taken with severe pains. An operation was performed. There was a gangrenous condition of the bowel, and an artificial fecal fistula resulted. This later on cured by operation.

ECTOPIA VESICA.

Dr. J. B. Coleridge, of Ingersoll, reported a case of this condition and the details of the Peters operation. The distal portion of the ureter, with a goodly rosette of bladder, was freed and implanted in the rectum. The patient did well. Dr. Coleridge paid a high tribute to the late Dr. Peters, whose genius had devised this operation.

SURGICAL TREATMENT OF INFANTILE PARALYSIS.

Dr. John R. Parry, of Hamilton, discussed this subject at considerable length. He gave in detail the best methods of dealing with these cases, both by mechanical appliances and by surgical intervention. The paper was one of much merit, and showed great care in its preparation. He pointed out that a very large measure of relief may be afforded these patients by well devised surgical treatment.

GENERAL SESSION, WEDNESDAY AFTERNOON, 31ST MAY.

At this session two very important addresses were delivered. One of these was by Dr. Crile, of Cleveland, and the other by Dr. Cullen, of Baltimore.

PHYLOGENETIC ASSOCIATION IN RELATION TO GRAVES' DISEASE.

Dr. G. W. Crile, Cleveland, gave his paper on this subject.

By phylogenesis is meant our tendencies and actions passed down through the decades of our ancestors to us: perhaps the strongest of these is self-preservation and fear.

Graves' disease is a disease of the entire motor mechanism of the body. Our sensations and emotions are simply unexpressed motor mechanism, inasmuch as both emotion and motion cause the same metabolic and other physical phenomena.

Graves' disease is an expression of emotions as seen in rapid heart, tremor, nervous symptoms, bulging of eyes, etc., and is, therefore, motor activity. Man is essentially a motor being, he is essentially in action of some kind: bind a man so that he cannot move, and let him try his utmost to break the cords, and we get phenomena identical with that found in Graves' disease and from emotions as fear and anger. All emotions are the result of self-preservation. Fear is the strongest of these, and can be elicited only in animals with motor power to fight against enemies or run from them. Animals that cannot run away show no evidences of fear.

Fear produces the phenomena of excessive stimulation as expressed in rapid pulse, acceleration of heart, tremor, excessive internal secretions, rise of blood pressure, cold sweat, erection of hair, etc., and while this condition exists no part of the body can respond to any lesser stimulus.

At this time the digestive and procreative functions are inhibited: all other functions are increased; and those that are increased are all useful for protection; even the special senses are stimulated so as to be able more definitely and quickly to perceive danger. Those that are inhibited are useless as protectives, while those increased in function are our real preservatives. When we are under tension from fear and on the alert we get stimulation of muscle, blood pressure must go up to supply it, heart accelerates to supply the demand, pulse rate increases; a greater amount of muscle sugar is burnt up, and hence a call on the liver to produce glycogen and on the adrenals to raise blood pressure. Stimulation of preservative apparatus gives motion or emotion. We fear in heart, brain, and every other tissue of the body, and each is stimulated or inhibited according

as it is a hindrance or assistance to self-protection. Hence the increase of strength noticed at time of excitement, with stage of weakness afterwards.

The same thing is seen in animals; they are frightened in all their organs. All forms of fear express themselves in similar terms and in similar phenomena. Fear in an animal means trying to escape, *e.g.*, rabbit; anger in an animal stimulates fight, *e.g.*, rat. Animals that have no power for attacking an enemy experience no anger; animals having no power to run experience no fear. In all stages of life difference of opinion leads to argument, this to fight even unto death.

The human being is in a continual state of auto-captivity; in spite of all the training a child gets at home, at school, at Sunday school, and elsewhere, his tendency is against this training, or why should training be necessary at all. Owing to this auto-captivity we are made to express our actions by emotions. Our forefathers had an impulse and acted upon it; we have impulses and have to restrain them owing to the laws of our auto-captivity. A soldier waiting for orders to attack an enemy suffers more than when in action under fire. Action relieves the emotions. When we get emotions and do not act we are more hurt by the excessive stimulation and production of the internal organs.

Experiments on the brain cells of rabbits that run from an enemy, and on dogs that fought an enemy, showed much greater physical exhaustion and changes in those of the rabbit. Emotion is stimulation for action.

In Graves' disease we get a history of strong emotions: enough stimulus to keep the patient awake during the night and to keep his attention during the day. Symptoms of Graves' disease follow any emotion, kept up for a certain length of time: a typical case of Graves' disease develops in a man who had lost his fortune and *worried* greatly over it. Another case in a young woman who was disappointed in love: how could this cause the disease? By theory of emotion instead of action, *e.g.*, heightened pulse, blush, etc., and the addition of worry. Marriage has been known to cure Graves' disease. Emotions in this disease are very acute.

Phenomena are always the same, no matter what the cause of fear is. We cannot find typical Graves' disease in animals, but we can often see some of the more prominent symptoms. When our ancestors were unrestrained there was no Graves' disease among them, because they got action for their emotions instead of repression.

Increase of heart beat, heightened pulse, increased pallor, protrusion of eyeballs, loss of weight, tremor, etc., are all produced in animals during great fear. The increase of adrenalin in fear is for the purpose of raising the blood pressure to drive blood into the contracted muscles, increase of glycogen in fear is for the purpose of oxidation so as to give power to the body for physical action. Adrenalin is found increased in fear and Graves' disease. Glycogen. Blood-pressure increased in both. Tremors, digestive disturbances, higher susceptibility to stimuli, and brain cells show marked physical change in both. There are no changes in cells of the spinal cord in either, because the spinal cord has no associated membrane (association fibres), while the brain is made up of it.

In Graves' disease, if the thyroid is decreased in size from any cause, the symptoms diminish. Therefore the thyroid has something to do with the disease. Again, if thyroid extract is fed to an individual in large doses, we get most of the symptoms of Graves' disease, and then if we withhold these doses the symptoms may disappear.

Too little thyroid secretion either abolishes or lessens both activity and emotions.

Tie off the blood supply of the thyroid, remove it, or give the patient rest and the symptoms diminish. Fear shows psychic shock, which is identical in results with physical shock. The fear of an operation gives same condition of shock as does the operation itself.

In Graves' disease there seems to be a pathological chain of reciprocal action between the brain and the thyroid; break the chain anywhere and improvement follows.

When we give the patient and the brain rest, the thyroid diminishes in the same proportion as the symptoms disappear.

The mechanism expressing motor function is the same as that expressing emotion; our progenitors gave action to stimuli; we withhold it and get not action, but reaction. Rest to brain, or remove the thyroid, are the recognized forms of treatment.

SURGICAL DISEASES OF THE UMBILICUS.

Dr. Thomas Cullen, Associate Professor of Johns Hopkins, Baltimore, gave an address on this topic with notes from a series of lantern slides.

The commonest disease of the umbilicus, namely, umbilical hernia, is quite easily recognized and requires the usual operative procedure for ventral hernia.

Among the rarer conditions are: (1) Abscess formation, be-

low the umbilicus and extra-peritoneal, simply a collection of pus in the abdominal wall, which necessitates only a superficial incision without going through the peritoneum. (2) Diseases of the umbilico-mesenteric duct. This duct may not become entirely obliterated, and hence may give cysts or concretions in the abdominal wall, if not obliterated in the centre; if the outer part remains open, it, being lined with intestinal epithelium, and showing the typical glands of Lieberkuhn, keeps continually pouring a secretion on the abdominal wall. It appears on the abdominal wall as a little red nodule or cyst. One such of these poured out gastric juice, and on microscopical examination proved to be lined by mucous membrane identical with the mucosa of the stomach.

There are four cases of these cystic nodules described in the literature occurring in women, which increased in size during menstruation and also during pregnancy. Microscopical examination of one of them showed it to consist of typical uterine mucosa.

When the inner part of the duct remains patent we get a Meckel's diverticulum attached to the abdominal wall. One should be careful in operating here as there is a danger of cutting the diverticulum and intestinal obstruction following. Treat it in the same way as an appendix, by cutting off and putting in a purse-string suture.

(3) Umbilical concretions have been known, and there are two or three cases of cysts of the sweat glands of the umbilicus on record. There is also described one case of Paget's disease of the umbilicus identical with Paget's disease of the nipple.

(4) Malignant growths. Primary or secondary. Primary may be either squamous epithelial in origin or glandular from the remains of the old duct. Either of these is very rare.

Secondary, however, is not so uncommon and is usually from stomach, gall-bladder, intestine, uterus or ovary. It may come from stomach or gall-bladder, via the liver and falciform ligament or ligamentum teres; direct by the stomach being in apposition to the umbilicus, or by way of the mesentery. When secondary from the pelvic organs it travels by way of the urachus.

(5) Diseases caused from the urachus. This duct may remain patent or may be obliterated only in places, so that we get all the diseases common to a duct of this nature: Small cysts at various points along its course are fairly common; there is one case on record of a stone being found in the urachus; there are quite a few cases of patent urachus that discharged urine at the umbilicus as well as from the external genitals. We may get an

infection of a patent urachus; there was one case cited in which a patient consulted the speaker, complaining of a hard, board-like abdomen in the middle line, just above the symphysis pubes; operation showed it to be due to an inflammatory thickening following an infection of the urachus; after removal the abdomen became as soft and flaccid as normal.

(6) Infections of the umbilicus. These are fairly common and may be from almost any germ. It must be specially borne in mind that in cases of puerperal septicemia the umbilicus of the babe is very liable to the same infection. Several cases have been noted where babies have died from septicemia which gave the same organisms as were found in the puerperal septicemia of the mother.

SECTION OF PREVENTIVE MEDICINE.

THURSDAY FORENOON, 1ST JUNE.

Greater attention to the preservation and care of children was urged by several speakers at the Ontario Medical Association meeting. "Governments apparently forget that children are the greatest asset any country can have," said Dr. J. W. S. McCullough, Secretary of the Provincial Board of Health. He remembered that while both Federal and Provincial Governments encourage immigration, even paying \$5 per head to those bringing in immigrants, a mother who brings a native-born child into the country is given nothing at all. "We hear a great deal," said he, "about race suicide and the duty of raising families, but not much help is offered to the mother." He advocated giving her a small sum when the child reaches five years.

The deaths from digestive diseases furnish a wider problem than epidemic diseases, said Dr. McCullough. The feeding of children, in which milk is the chief element, is thus of dominating importance. Dr. J. H. Mullin, of Hamilton, described the system by which Hamilton, at a cost of more than \$1,000 a year, supplies modified milk for infants, greatly reducing the mortality.

The mortality of infants is almost double that of persons from every form of tuberculosis, said Dr. John Phillips, associate Professor of Medicine, Western Reserve University, Cleveland. For the most part this mortality could be prevented, the two great causes being poverty and ignorance.

Dr. Phillips described the elaborate measures adopted successfully in Cleveland to lower infant mortality and to care for the children.

Slow sand filtration, followed by treatment with chlorine, was advocated by Dr. J. A. Amyot, of Toronto, as the best method of obtaining a pure water supply.

Dr. Amyot said chlorine was not injurious to man. Other explanations were found for the harm done to plants. In this connection Dr. Francis E. Fronczak, Health Commissioner of Buffalo, explained that the chlorine combines chemically with the chlorophyll in the plants, thus causing the plants to die, but being vegetable, it did not form a chemical combination in the human organism.

Dr. Amyot complimented the men who had to deal with the water situation in Toronto. While the "raw" water reaching the intake was worse this year than it had been for years, yet there was a lower typhoid rate than for years. This was due to the backbone of the men in charge, who in spite of all protests had gone on with the chlorination, even increasing the dose—but they had saved the city from a far worse visitation of typhoid.

Dr. Fronczak said the odor and taste of chlorine-treated water could be removed by "cascading," as tried at Marseilles, or by storing for some time after disinfection. He strongly urged the formation of an International Commission to study the conditions and to furnish a pure water supply for the whole Niagara district, where typhoid was almost endemic, for there was no use in one community adopting sanitary measures while others continued to pollute the same river and lake.

Dr. Helen MacMurchy read a carefully prepared paper on medical inspection of schools; a helpful address on surgery was given by Dr. A. E. Garrow, Assistant Professor of Surgery in McGill University, Montreal, and the so-called "infantile paralysis" was dealt with in two important papers read by Dr. Robert Parry and Dr. John Parry, of Hamilton.

SECTION OF EYE, EAR, NOSE, AND THROAT, WEDNESDAY FORE-NOON, 31ST MAY.

This was a very busy section and got through a number of papers of marked ability.

PREVENTION OF BLINDNESS.

Dr. Thomas A. Woodruff, of Chicago, handled this topic with clearness. He dwelt at length on the value of prevention. He discussed blindness and injuries to the eyes in industrial diseases, and the best methods of preventing these. He then took up wood alcohol and its effects on vision. His next topic was trachoma. He directed attention to its increase in the United States. Lastly he spoke of ophthalmia neonatorum. The child's eyes may be infected in utero, during labor, or just after birth. In the treatment he gave the first place to nitrate of

silver. He then emphasized the value of preventive measures as laid down by Riedé many years ago.

HEADACHES FROM HETEROPHORIA.

This was the title of Dr. G. Sterling Ryerson's paper. He pointed out the cause and symptoms of headache from this condition, such as the pains, nausea and vomiting.

This paper was discussed by Dr. C. Campbell, Toronto, Dr. Norman Price, Niagara; T. A. Woodruff, Chicago, and Dr. Reeve, Toronto, all laying stress on the suffering this condition could produce.

NASAL ACCESSORY SINUSES.

Dr. Lee M. Hurd, of New York, dwelt on the different methods of treatment. He discussed the acute and chronic inflammations. He related the best methods of dealing with disease in these sinuses. The paper was replete with information supplemented from the writer's own wide experience.

EQUILIBRIUM TESTS.

Dr. J. P. Martin, of Hamilton, took up the various means of testing equilibrium. He went fully into the causes of loss of equilibrium. The tests as used in Prof. Bruch's clinic in Berlin were given. These tests are known as rotation tests, caloric tests, pressure tests, static tests, galvanic tests. The various morbid conditions of the ear that cause loss of equilibrium were taken up.

OTITIS MEDIA PURULENTA CHRONICA.

Such was the title of Dr. Price-Brown's paper. Attention was invited to the teachings of many that this condition, where there are no complications, can be cured by treatment through the natural passages. In cases of marginal perforation an operation is almost certain to be required. Proper treatment must be given to the adenoids and faucial tonsils. Irrigation with warm boracic lotion, and then applying pure glycerine, is helpful in many cases. Alcohol of 95 per cent. may cure some cases.

SUCCESS IN CATARACT OPERATIONS.

Dr. W. M. Brown, of Neustadt, Ont., pointed out that these operations called for skill and nerve. The following points should be observed: Wash with soap and water, wash with sulphuric ether, wash with bichloride (1-4,000), evert the lids and wash with bi-chloride (1-4,000), add 1 drop eserine (1 per cent. solution), half-hour before, and repeat 15 minutes before opera-

tion, 3 drops cocaine, 4 per cent. at intervals of two minutes for five times before operation, boil instruments, put them in alcohol then in carbolic solution 1 per cent., use lint out of bichloride 1 in 4,000, withdraw the knife slowly. The knife must be very sharp.

THE BANQUET.

The banquet on Wednesday evening, in the Clifton House, was a marked success.

A resolution was moved by Dr. J. H. Elliott and seconded by Dr. H. M. Parsons, that all general hospitals should make provision for the care of tuberculous patients, or have the government grant withheld. This was approved of by the meeting.

There was no grant made to the library this year.

There were a number of other pleasant features of the meeting, such as an outing to Dr. Grant's place up the river beyond Dufferin's Island. There was the Maid of the Mist trip, which many took in and enjoyed. The Golf Club threw open their club and grounds to the members of the Association.

The local committee had worked hard, and with the result that the meeting was a very successful affair. The Niagara Falls medical men won for themselves the highest praise for their efforts to make the gathering both profitable and pleasant, for it certainly was both.

There were about 250 delegates present from all parts of Ontario and some 50 visitors from other provinces or the United States. The programme was unusually interesting. Many very valuable papers were contributed by the members from Ontario, as well as some guests from the United States.

The meeting will be held next year in Toronto. The following officers were elected: President, Dr. Herbert A. Bruce, of Toronto; First Vice-President, Dr. F. W. E. Wilson, Niagara Falls, Ontario; Second Vice-President, Dr. Wm. Hall, Brampton; Third Vice-President, Dr. F. Drake, London; Fourth Vice-President, Dr. George Field, Cobourg; General Secretary, Dr. F. A. Clarkson, Toronto; Treasurer, Dr. J. Heurner Mullin, Hamilton.

Selected Articles

ABSENCE OF ABDOMINAL RESPIRATORY MOVEMENT AN INDICATION OF PERICARDITIS

BY W. ESSEX WYNTER, M.D.,
(Proceedings Royal Society of Medicine.)

In a disorder so serious and attended with so little obvious indication as pericarditis, an additional and manifest sign should be welcome. Such is inhibition of the action of the diaphragm, indicated by suppression of normal abdominal respiratory movement. It has been overlooked probably from examination being unduly restricted to the chest. Loss of abdominal respiratory movement as an indication of disease, except in paralysis of the phrenic nerves, has been to a great extent monopolized by observers in connection with peritonitis and acute abdominal lesions. Primary thoracic disease, however, has its share in causing suspended function of the diaphragm, though in the majority of instances affecting the lung and pleura this is one-sided, and the influence on abdominal movement proportionately less marked. In acute pericarditis, on the other hand, the cessation of phrenic action is bilateral, and consequently absence of abdominal movement is as obvious as in abdominal disorders, albeit other abdominal manifestations, such as muscular rigidity and general tenderness, are lacking. The following cases bring out this point with great force, as the loss of abdominal movement led to mistaken diagnosis of abdominal lesions.

A young man was seized with acute epigastric pain while waiting at table. Conspicuous absence of abdominal movement led to the diagnosis of perforated gastric ulcer, and the writer was asked to take him into the Middlesex Hospital for operation. Next morning the acuteness of the pain had diminished, he had enjoyed some sleep, and was obviously better, clamoring for food, and impatient of restraint. There was no evidence of free gas in the peritoneum or of local irritation. A routine examination revealed nothing. Next day he got up and went out of his own accord, but experienced a recurrence of the pain. When re-examined on the fourth day, pericardial friction was obvious, there was marked dyspnoea with præcordial pain, the abdomen remaining immobile. Pericardial friction was audible 4 days.

Temperature 101.4°, pulse 96. On getting up a week later the temperature rose to 103°, and the pulse to 104, but no further development occurred, and he was able to leave the hospital 10 days later.

On Nov. 2, 1909, a man, aged 40, was admitted with pain in the abdomen extending into the thighs, headache, anorexia, vomiting, and parched mouth of two days' standing. The temperature was 102.6°, pulse 92. He lay on his back with his legs drawn up, the right rectus abdominis was tense, and the right iliac region was tender. Abdominal respiratory movement was scarcely discernible. A routine examination showed only a reduplication of the second cardiac sound. No local indication of pericarditis then existed. A consultation was held, and the almost inevitable diagnosis was appendicitis. Under rest the symptoms subsided in the next three weeks. Abdominal movement was more apparent and advantage was taken of the quiescent period for appendicectomy, which was performed on Dec. 7. Careful examination revealed no morbid condition, and there were no adhesions. The incision healed rapidly, but after five days there was a rise of temperature with recurrence of symptoms, and on Dec. 12 pericardial friction was marked, the heart's apex being in the fourth space in the nipple line. Pulse, 90 to 100. The diaphragm was not contracting at all, the abdomen actually sinking in with each inspiration. The stomach was dilated, and its resonance could be traced as high as the fourth intercostal space in the axilla. Breath sounds were absent at both bases, but there was no complete dulness on percussion. On Dec. 16 radioscopy showed a large shadow in the heart region suggestive of pericardial effusion. The diaphragm was motionless in the position of expiration. On Dec. 22 diaphragm movement was returning, though friction could still be heard over the heart. Breathing became audible at both bases. A week later friction had disappeared, but a systolic apex murmur was audible. The man was discharged on Jan. 8.

These cases illustrate temporary remission of symptoms of pericarditis attending rest in bed without special treatment, and suggest that the inflammation possibly commencing in some other part than that immediately in contact with the chest wall, manifested itself by reflex inhibition of the diaphragm some days before the appearance of ordinary signs.

On Dec. 1, 1905, a man, aged 21, with a history of rheumatism six years, and also three months before, was admitted with endocarditis and pericarditis. Temperature 102.2°, pulse 130, respiration 36. There were a double aortic bruit, the bruit de

galop, and friction over the præcordia. Abdominal respiratory movement was absent. By Dec. 4 these active signs subsided and there was a return of abdominal movement, but joint pains continued till Dec. 11. He was discharged on Jan. 12.

On Sept. 22, 1906, a boy, aged 9, was admitted on account of pain in the epigastrium, of one week's duration, extending to the left clavicle. Tonsillitis had also existed five days. Temperature 102.6° , pulse 120. He lay with his arms above his head, flushed and breathing rapidly. The præcordial dulness was extensive and described as pear-shaped. The heart sounds were muffled. There was a faint mitral regurgitant murmur, with accentuation of the pulmonary second sound. Friction could be heard all over the pericardium, but was loudest over the fourth costal cartilage and sternum. There was tenderness on pressure in the epigastrium, and the abdomen moved very little with respiration. There was slight rigidity of the recti abdominis. By Oct. 2 friction had subsided, but there was a recurrence of tonsillitis and he was not discharged till Nov. 10.

On June 6, 1907, a girl, aged 16, was admitted with rheumatism and tonsillitis of a fortnight's duration. She improved speedily, but on getting up there was a relapse, with pain in the epigastrium. Temperature 102° , pulse 120, respiration 50. Præcordial dulness extended laterally $1\frac{1}{2}$ in. to the right of the sternum, outside the nipple line, to the left and upwards to the third rib cartilage. Pulsation was felt in the third left intercostal space. The observation was made that "when the chest rises in full inspiration the abdomen falls in, and *vice versa*." She was discharged convalescent on June 26.

Absence of abdominal movement is fairly constant in acute pericarditis, especially that with fibrinous exudate. When the front of the body is fully exposed, the stillness of the abdomen is very striking, suggesting peritonitis, unless, as sometimes happens, there is inspiratory recession, which might mislead, unless the want of correspondence with the movement of the upper chest is noticed. The inertness of the diaphragm is not merely inferred, but by radioscopy can be observed, the midriff mounting high into the thorax, and exhibiting no contraction, and in some instances an actual rising of $\frac{1}{4}$ in. with each inspiration. In one case the contents of the upper abdomen, such as the kidney and opaque masses in the intestine, could be seen to participate in this upward inspiratory movement.

Concomitant and indeed consequent phenomena are a tendency to dilatation of the hollow abdominal organs, especially the stomach, collapse and loss of function in the lower lobes of

the lungs, slight upward displacement of the heart, and of the organs beneath, and in contact with the diaphragm. Loss of abdominal movement, as a sign of pericarditis, is the more valuable, in that it may precede and outlast the other indications. It explains the cyanosis and dyspnoea so usual in the complaint, and the upright position so commonly assumed. The former is the effect of respiration restricted to the upper lobes of the lungs. The latter points to an unconscious effort to utilize the weight of the abdominal viscera to depress the passive diaphragm and enlarge the thoracic area.

If loss of abdominal respiratory movement is well marked in the absence of more obvious thoracic and abdominal lesions, pericarditis should be closely looked for. If this sign is wanting dubious indications of pericarditis may be discounted. In the current descriptions of the disorder this symptom is not recognized, but Gibson, in his text-book published in 1901, says: "Interference with the action of the diaphragm is sometimes observed, and leads to discovery of pericarditis. It is obviously due to reflex action, and may, or may not, be associated with painful sensations." The writer has not seen an acute case which failed to show this sign.—*The Medical Review*.

Editorials.

ONTARIO MEDICAL ASSOCIATION

The Thirtieth Annual Meeting of the Ontario Medical Association was held in the Clifton Hotel, Niagara Falls, May 30th, 31st and June 1st. There was a universal consensus of opinion that the meeting was in all respects good. In the minds of many there was a firm conviction that all things considered it was the best and most enjoyable meeting the Association has known. The papers presented were of a very high order, and the discussions ranked among the best ever heard in Ontario.

Never did Niagara Falls look more beautiful; never did any one present see finer weather; never did local committees do more magnificent work; never did the resident members of any district show more kindness and consideration towards their visitors.

We desire to offer our congratulations to the able and genial President, Dr. H. R. Casgrain, of Windsor, whose conduct as the commanding officer was in all respects admirable. If the new commanding officer can *fill the bill nearly* as well at the next meeting we shall all be satisfied. We desire also to offer our congratulations to Dr. Herbert A. Bruce, of Toronto, not only on his election to the Presidency, but also on the fact that his election was practically unanimous.

The meeting next year will be held in Toronto. The question has frequently arisen as to the expediency of holding so many meetings of the Association in the City of Toronto. It is probably pretty well

known that in the past the majority of the physicians of Toronto have voted for outside places when they had the opportunity. We do not wish, however, to discuss the matter at the present time. We simply wish to ask the question, which has been asked and answered many a time since the first of June. Why should we not have many of our meetings in the future in that beautiful town which is called Niagara Falls? In expressing an opinion in favor of such a proposal we, of course, understand that it would be very unjust to ask or even expect those kind good souls in the Niagara District to entertain outsiders in such a lavish fashion as we experienced recently. The Association might well go to Niagara Falls occasionally with the understanding that its regular officers should look after the arrangements for the meetings.

McGILL REUNION

The Reunion of the Medical Graduates of McGill University, June 5 and 6, was the largest and most impressive function of the kind ever held in Canada. The gathering together of 500 graduates in one faculty alone was a remarkable achievement of which the originators and managing committee may well feel proud. This was the second reunion, the first occurred about 29 years ago. It was expected at one time that the graduates would have had this reunion last year, but the death of King Edward VII caused the postponement.

The new medical buildings are very extensive and also modern in every way. The main building was formally opened by His Excellency the Governor-General about noon of the first day. A luncheon of the McGill Union followed.

On Tuesday morning His Excellency laid the corner stone of the new building for the Montreal General Hospital. In the afternoon a garden party was given on the grounds of the Royal Victoria Hospital. Her Excellency received, being assisted by Mrs. Wm. Gardiner and Miss Shepherd.

A huge banquet was tendered to the graduates by the University on Tuesday evening, which was held in the new dining room of the Windsor Hotel, Montreal's largest hotel. We are told that there were 520 present.

Dr. Frank Shepherd, the Dean of the Medical Faculty presided, and with him at the head of the table were His Excellency, the Governor-General, Principal Peterson, Sir Thomas Grant, Dr. Thos. Roddick, Dr. R. A. Reeve, Lord Lascelles, Dr. Guerin, Mayor of Montreal, Dr. Casey Wood and others. The banquet was a huge success, with just one unfortunate little blot.

HORSE PLAY

There is probably no member of the medical profession in Canada more highly esteemed than Dr. Geo. E. Armstrong, the popular President of the Canadian Medical Association. The news of his illness during a recent meeting caused much regret in all parts of the Dominion. Next came the news that a bit of horse play was the cause of his sickness. We may say that "horse play" is a respectable old English word, and is defined as "rude, boisterous play." In this instance a number of the graduates during the banquet passed the doctor up from a blanket. We had hoped that this unfortunate incident would not

become public, but we were vastly mistaken. The following report of it appeared in the *Toronto Star Weekly*, under the head of "Bounced a Noted Surgeon": "To the deafening chorus of 'Rah, rah, rah,' and the shouts of 'And again,' a dozen lusty doctors bounced the noted surgeon, Dr. G. E. Armstrong, at the Medical Graduates Reunion Dinner, held in the Windsor Hotel last week, and next day Dr. Armstrong was laid out on a cot, a patient in the hospital of which he is the Chief. Dr. Armstrong tried to avoid them by running round the table, but the doctors of another class headed him off, and there was no getting away from the tight brotherly grip of the stalwarts. Ladies in the galleries gasped, and an excited little scream escaped one as the doctor's body went upwards towards the electroliers. His Excellency, Earl Grey, smiled, and Dean Shepherd poked an anxious face over the roses and peonies at the head table."

It would be interesting from a psychological standpoint if some one could explain such an idiotic act. This was not a student body, but an assemblage of the cream of the medical graduates of one of the greatest universities in the world, with a representative of His Majesty the King as one of the guests. When a crowd of men become seized with hysteria, and some one lunatic commences horse play almost inconceivable things are likely to happen. Fortunately horse play, which is almost always silly as well as dangerous, is much less common now than it was in the past, so far as the Anglo-Saxon race is concerned.

Notes

RECENT GRADUATES IN MEDICINE

UNIVERSITY OF TORONTO.

FACULTY OF MEDICINE.

Final Examination—Degree with Honors—1, H. W. Benson; 2, C. Bouck; 3, C. C. Birchard; 4, W. D. Smith; 5, E. W. Mitchell; 6, J. A. Gardiner; 7, H. H. Gordon; 8, L. Broe; 9, W. J. Leach; 10, G. A. McQuibban.

Medals—J. M. Livingston, gold; A. S. Eagles, 1st silver; C. Bouck and N. A. Christie, 2nd silver; J. G. A. Campbell, 3rd silver.

Chappell Prize in Clinical Medicine—H. W. Benson.

Graduates in Arts, in Natural Sciences, or in the Biological and Physical Sciences—A. H. Baker, J. G. A. Campbell, G. G. Copeland, J. A. Gardiner, R. E. Guyatt, T. R. Hanley, I. D. Hayes, P. V. Helliwell, C. O. E. Kister, J. M. Livingston, A. I. McCalla, T. W. Nancekivell, F. S. Park, L. A. Roy, Miss I. M. Roberts, H. J. Shields, L. O. O. Skeeles, H. G. Smith, G. B. Stalker, W. L. Whittemore, W. A. Wilson.

Group I.: Medicine, Clinical Medicine, Pathology and Therapeutics—1, H. W. Benson; 2, J. M. Livingston; 3, L. A. Roy; 4, C. Bouck; 5, A. S. Eagles; 6, R. D. Defries; 7, F. S. Park; 8, N. A. Christie; 9, Miss I. M. Roberts and G. G. Copeland; 11, W. O. Bonsor and H. J. Shields; 13, C. W. Sinclair; 14, E. W. Mitchell.

Group II.: Surgery, Clinical Surgery, Surgical Anatomy and Pathology—1, R. D. Defries; 2, H. W. Benson; 3, N. A. Christie and A. S. Eagles; 5, J. M. Livingston; 6, C. Bouck; 7, C. W. Sinclair; 8, W. D. Smith; 9, A. H. Baker; 10, T. R. Hanley.

Group III.: Obstetrics, Pædiatrics, Gynæcology and Pathology—1, C. Bouck; 2, A. S. Eagles; 3, N. A. Christie; 4, J. M. Livingston; 5, T. R. Hanley; 6, L. A. Roy; 7, H. W. Benson; 8, F. S. Park and Miss I. M. Roberts; 10, J. A. Gardiner; 11, W. D. Smith; 12, C. C. Birchard; 13, A. H. Baker and R. D. Defries; 15, W. J. Leach; 16, H. H. Gordon; 17, E. W. Mitchell; 18, J. G. A. Campbell; 19, L. Broe; 20, Miss S. A. Cunningham; 21, G. G. Copeland.

Group IV.: Medical Jurisprudence, Toxicology, Hygiene and Psychiatry—1, T. R. Hanley; 2, A. S. Eagles; 3, J. G. A. Campbell; 4, C. G. Birchard and F. S. Park; 6, C. Bouck; 7, J. A. Gar-

diner; 8, G. G. Copeland, H. G. Smith, B. R. Burwash, E. W. Mitchell, H. E. Thompson, N. A. Christie, R. D. Defries, A. P. Hart, W. A. Wilson, C. R. Wilson; 18, H. H. Gordon and H. M. Mosdell; 20, H. W. Benson and L. O. C. Skeeles; 22, G. A. McQuibban.

Pass—C. C. Alexander, H. R. Barker, W. D. Barrett, N. J. Barton, R. Blanchard, J. C. Bradley, L. F. Brogden, F. T. Bryans, F. S. Burke, H. C. Burroughs, W. C. Campbell, W. R. Cann, G. M. Carson, W. E. Caven, C. W. Clark, G. H. Clement, L. H. Coates, M. G. Cody, W. M. Cody, C. F. Connolly (Aeg.), W. A. Costain, R. G. Douglas, E. V. Emery, D. T. Evans, N. J. Ferrier, A. Fettes, E. J. J. Finnerty, Miss S. L. Fotheringham, C. L. R. Fuller, A. R. Gikchrist, T. J. Glover, R. M. Gorssline, L. O. Griffin, J. E. Hagmeier, L. G. Hagmeier, W. R. W. Haight, H. H. Harvie, H. Heffering, C. W. Henders, G. L. Hodgins, R. O. Hodgson, W. L. Hutton, R. A. Ireland, L. P. Jones, L. A. Jones, L. W. Kergin, J. M. Lajoie, J. C. K. Langford, A. V. Leonard, A. F. Lepper, R. D. Mace, J. E. Macklin, M. R. Mahlangeni, W. Mainprize, H. K. Manning, A. C. Martin, W. G. Martin, H. B. Moffatt, J. K. Mossman, C. J. McCabe, P. S. McCaffrey, J. F. McCracken, V. A. McDonough, E. H. McGavin, F. E. B. McGilvery, W. J. McKenzie, E. A. Mackenzie, J. Maclean, J. A. McPherson, J. W. McQuibban, H. Orr, A. G. Poole, J. A. Reid, J. F. Rigg, D. Rigg, A. E. Ross, A. Rossell, H. L. Rowntree, M. C. Salmon, F. R. Scott, N. Shachnove, R. L. Shields, R. S. Smith, F. Stainsby, Miss E. L. Stewart, D. Sweeney, W. C. Swenerton, F. L. Thompson, R. N. Tripp, W. R. Tutt, M. C. Vaughan, A. H. Veitch, C. W. Waldron, W. M. Wilkinson, J. P. Wilson, H. M. Yelland, C. R. Young, E. W. Zumstein.

C. F. Connolly is granted *ægrotat* standing in the subjects of Medicine, Surgery, Pathology, Obstetrics, Gynæcology, Hygiene, Ophthalmology, Otology, Laryngology and Rhinology and Pædiatrics.

T. F. Kelly is granted *ægrotat* standing in the subjects of Hygiene, Ophthalmology, Otology, Laryngology and Rhinology and Pædiatrics.

The following students have completed supplemental examinations in the following subjects: Medicine—A. Steinberg, G. L. Williamson. Surgery—A. D. W. Kay, A. Steinberg. Pathology—T. A. Brandon. Gynæcology—A. Steinberg. Clinical Medicine—Miss M. A. Doherty, K. M. Murray, A. G. Scott, G. L. Williamson. Clinical Surgery—T. A. Brandon. Hygiene—F. O. Mahoney. Ophthalmology, Otology, Laryngology and Rhinology—A. Steinberg.

WESTERN MEDICAL COLLEGE GRADUATES.

The results of the Western Medical College, London, examinations have been made public by the Faculty.

The following is the list of graduates: Cyril Imrie, Johannesburg, Mich., gold medallist; A. Duncan, London, silver medallist; Neller T. George, Muncey; Allison R. Gordon, Weyburn, Sask.; W. J. Knight, Exeter; Edwin C. Axford, Talbotville; C. T. Dunfield, Petrolea; Alfred McRitchie, New Scotland; E. A. Neff, Ingersoll; J. P. Johnston, Fingal; Wilfred Thurtell, Ingersoll; Seymour Ross, London; C. G. Bell, Merlin; W. Anderson, Montreal; N. A. Stuckland, London; J. A. Jardine, Nottawa; Ivan Annett, Watford; H. J. Stephens, London; H. B. Boyd, Salford; Elmer W. Brown, Neustadt; John F. Duncan, London; C. Gibson, Allandale; Roy R. Smith, Galtz, Alberta.

QUEEN'S UNIVERSITY, KINGSTON.

Degree of M.D. and C.M.—W. R. Bateman, M. R. Bow, B.A., F. C. Boyd, B.A., F. C. Bracken, J. E. Carmichael, B.Sc., S. G. Chown, B.A., W. Y. Cook, L. J. Corrigan, C. M. Crawford, B.A., R. A. Dick, F. W. Gravelle, M. J. Gibson, P. H. Huyek, W. R. Hambly, B.Sc., J. V. Jordan, G. B. Kendrick, B.A., P. J. Kennedy, A. Lipman, C. R. McCartney, A. W. Macbeth, F. J. Matthews, H. Mohan, N. E. MacDougall, M. A. MacKay, J. G. McCammon, B.A., R. V. McCarley, B.A., C. E. McCutcheon, J. J. McDermott, J. P. McDermott, M. H. McDonald, A. G. McGlennon, B.A., J. McKenzie, L. H. O'Meara, J. O'Reilly, B. C. Patterson, R. R. Paul, C. W. Pringle, G. A. Publow, A. J. Randall, J. M. Ravary, A. C. Scott, R. A. Simpson, E. E. Steele, G. E. Thwaites, S. E. Thompson, H. C. Wallace, W. E. Wilkins.

ITEMS

We would draw the attention of our readers, particularly those interested in surgery, to the announcement of a special course in Orthopedics by Le Docteur F. Calot, Paris, Surgeon-in-Chief to the Rothschild Hospital and the Orthopedic Institute. Dr. Calot's name needs no introduction to the surgical world, and we are sure that all who can avail themselves of this opportunity will be well repaid for the time spent.

Personals

Dr. G. Sterling Ryerson, of Toronto, sailed from Quebec for Liverpool June 30th.

Dr. A. W. Mayburry, 569 Spadina Ave., sails for Europe by the S.S. "Mauritania" on July 5th.

Dr. J. Orlando Orr, of Toronto, returned after a trip to England, Scotland and France July 2nd.

Dr. Alex. Pirie, F.R.C.S. Eng., in charge of the X-Ray Department, St. Bartholomew's Hospital, London, England, has been appointed to a similar position at the Royal Victoria Hospital, Montreal, and assumes his duties on September 1st.

We regret that the report of the Montreal meeting of the Canadian Association came too late for publication in this issue. We may say, however, that the meeting was successful in every way. It gives us much pleasure to announce that the next meeting will be held in Edmonton, under the Presidency of Dr. Mac-Kid, of Calgary. Both cities, i.e., Edmonton and Calgary, sent cordial invitations, and it was arranged that the Association should hold the main portion of its meeting at Edmonton, and then the members should go south to Calgary, where they will be expected to remain one or two days.

It was reported in Montreal, April 14th, that Dr. A. E. Garrow would be appointed Surgeon-in-Chief of the Royal Victoria Hospital in place of the late Dr. James Bell. After some delay, however, Dr. Geo. E. Armstrong was induced to accept the position. This will mean quite a change for Dr. Armstrong, and will necessitate his retirement from the position of Attending Surgeon to the Montreal General Hospital, which he has held for years. The appointment of Dr. Armstrong was, of course, not intended as any slight to Dr. Garrow, who is admitted to be a very able surgeon. As a matter of fact he has a host of friends and admirers, and his success in the future is assured. The position really came to Dr. Armstrong as a matter of course because of his professorship in McGill University.

Obituary

A. T. WATSON, M.D.

Dr. A. T. Watson, formerly of Leamington, died suddenly at St. Joseph's Hospital, London, Ont., May 21st.

CARLTON C. FREDERICK, M.D.

Dr. C. C. Frederick, one of the best-known surgeons and gynaecologists in the State of New York, died at his home in Buffalo, April 30th, aged 56.

THOMAS HENRY BRENT

Dr. T. H. Brent died at his home in Toronto after an illness lasting for several years, aged 62 years, on May 27th. He spent the greater part of his professional life in Newcastle, Ont., where he carried on a large practice for about twenty-five years until his illness compelled him to give up active work.

ALFRED JOSEPH GLENHOLME MACDOUGALL, M.B.

It was a great shock to the many friends of Dr. "Glen" Macdougall when telegrams reached Toronto on the evening of June 2nd, conveying the sad message that their friend had died suddenly at his home in Port Arthur on that day. Dr. Macdougall was a native of Toronto, and a son of the late Mr. Alfred Macdougall. He received his medical education in the University of Toronto, graduating M.B. in 1900, and during his student days was noted for his many companionable qualities. It may be said with truth that he was loved by all who knew him.

During the Boer War he was appointed a civil surgeon by the British Government and attached to the Worcester Regiment

in Bermuda. When peace was declared he was commissioned to take 1,100 Boer prisoners to Cape Town on the transport *Staffordshire*.

On his return to Canada he settled in Port Arthur, where for the last five years he successfully practised his profession, and at the time of his death was President of the Thunder Bay Medical Society. There are left of his family to mourn his loss a widow and young infant 4 months old and a mother and sister.

MR. HARRY POTTS

We have to announce with deep regret the death of Harry Potts, a first year student in Medicine at the University of Toronto. When the recent examinations were finished he was preparing to go to his home for the summer, when he was suddenly stricken with scarlet fever. He was removed to the Isolation Hospital, Toronto, and died within a few days. He was dead and buried in Norway Cemetery before his friends knew that his condition was even serious.

Book Reviews

A Text-Book of Public Health. By JOHN GLAISTER, M.D., D.P.H., F.R.S.E. Edinburgh: E. & S. Livingstone, 15 Teviot Place.

This is the second edition of Professor Glaister's work. He found it advisable to divide the former work, his text-book on "Medical Jurisprudence, Toxicology and Public Health," into two volumes, a plan rendered necessary not only by the growth of knowledge, but by the increased importance of these subjects from every point of view. The first volume, on Medical Jurisprudence and Toxicology, was issued recently. It is already evident that this book will be a chief authority on the subject of Public Health. Recent articles and addresses have used the figures and diagrams to be found here, and they have been quoted elsewhere. If, for example, we desire to say something on infant mortality, here is all our material, including pictures, at hand. So it may be said of preventable disease, of sanitary law, of garbage disposal, of foods, and, in a word, of all topics related to the public health. Libraries must have this book and the general practitioner will find it a great help, partly because it's so up-to-date.

The Treatment of Syphilis with Salvarsan. By DR. WILHELM WECHSELMANN, of Berlin, with an introduction by PROFESSOR DR. PAUL EHRLICH, of Frankfurt-on-Main. Only authorized translation. By ABR. L. WOLBARST, M.D., of New York. With 15 textual figures and 16 colored illustrations. New York: Rebman Company.

This volume sets forth in a most entertaining and detailed way the advent of this wonderful remedy, its preliminary trial on animals, and its further cautious application to humans, and finally its most marvellous results, on being introduced as an active therapeutic agent.

Ehrlich studied biologically the curative processes in experimentally induced diseases, and thus discovered what he terms "tropism," or the specific relationship and storage of curative agents, in the organs as well as in the parasites. Basing his procedure on exhaustive studies, he prepared synthetically and tested such remedies as would with minimum of poisonous effect on the organism (minimum organotropism) produce the maximum of poisonous effect (maximum parasitotropism) on the parasite.

During the course of years, out of hundreds of substances experimented with, few were found available—and these were **arsacetin, arsenophenylglycin, and salvarsan.**

Hata was asked to experiment with these on animals, and found that salvarsan was curative of recurrent fever in mice, of spirillosis in chickens, and of syphilis in rabbits.

Wechselmann then gives his experience with 1,400 cases which he has treated, with many extremely interesting case records and deductions therefrom. A few observations may be summarized as follows, referring to treated cases:

1. Primary erosive chancres epidermize in 48 hours.
2. Specific phimoses recede without operation.
3. Chancres are preferably excised, thereby removing immense numbers of spirochaetes, enabling the remedy to act more vigorously upon those remaining.
4. Inject small quantities of salvarsan around the chancre.
5. In majority of cases secondary symptoms do not appear after disappearance of initial sore.
6. Mucous membrane patches disappear frequently in 24 hours, and those in the throat and larynx with remarkable celerity.
7. Its paramount effect is shown in periostitis and severe bone pain, which is truly magical.

Regarding its effect upon the eye, he does not regard it as serious. Cases of severe choked disc, advanced optic atrophy, and incipient optic neuritis were all treated and either improved or remained as before—none made worse.

In tabes and paralysis the majority were favorably influenced and the patients themselves declared a material improvement, but it is too early to draw conclusions as to its permanency.

With reference to the Wassermann reaction, he claims that the majority of cases become negative thereto in four or five weeks, and also notes that the period required for the reaction to disappear depends upon the clinical severity of the disease, and that the reaction gradually diminishes in strength to its disappearance.

As to toxicity, no essential arsenical poisoning was noted in his 1,400 cases, nor has any death due to strict arsenic poisoning been reported.

The necrotic foci occasionally accompanying its intramuscular or sub-cutaneous administration he believes to be almost always a non-septic process, as shown by cultural procedure. Where otherwise it is due to faulty technique.

As to the methods of application, he gives several in minute

detail, with their modifications. He himself prefers the subcutaneous method entirely, using a neutral emulsion or suspension of finely precipitated drug in normal salt solution, injecting it beneath the shoulder blade after disinfection of area with iodine. He claims little or no pain if care is observed in obtaining a neutral reaction. Briefly, his method is:

1. Dissolve Salvarsan in mortar with 1 to 2 c.c. of commercial Sod. Hydrate.

2. Add acetic acid glaciale until a fine yellow slimy sediment is formed, then add 1 or 2 c.c. of sterile distilled water.

3. Neutralize with sod. hydrate or 1% acetic acid as required by litmus.

4. Centrifugalize and take up the sediment with normal salt solution—5 to 10 c.c.

5. Inject with syringe as above.

Iversen, of St. Petersburg; Schreiber, Hoppe and Ehrlich prefer the intravenous method. To quote Wechselmann:

"According to my own conception of the subject, it is more a disease of the tissues than of the blood, and for this reason I do not attribute any decisive importance to the method of incorporation of the remedy. . . . We are in duty bound to investigate whether a more favorable action justifies a correspondingly larger risk of danger. As to the intragluteal method of injection, there is this objection that I have seen three cases of peroneal paralysis therefrom."

To quote Ehrlich:

"He (Wechselmann) assumes that any recurrence is due to spirochaetal foci, which cannot be attacked by the remedy on account of imperfect vascular supply. I believe that this opinion will explain the particularly disagreeable surprise caused by recurrences recently observed where the disease affected nerve trunks. Subsequently these hidden and poorly vascularized parts may flare up, as a localized recurrence, unless they are overcome by reinjection.

It seems to me that the *ictus therapeuticus* (therapeutic attack) of the subcutaneous method and intramuscular injection is frequently not what it ought to be, especially as regards the permanency of the effect. Therefore, under certain conditions the energetic *ictus therapeuticus* of the intravenous application, which has been made certain as the result of many observations, is to be preferred to other methods, being especially indicated in early symptoms of syphilis. Moreover, anxiety as to a repetition of the injection, which is justifiable in the deposit treatment, need not be considered in this connection."

Then follows an extensive resumé of the literature, reviewing the work of such men as Alt, Dörr, Gerronen, Haggerberg, Neisser, Gluck, Pick, Iversen, Hoffman, Kromayer and many other noted syphilographers, and a comparative tabular arrangement of a large number of cases.

A comprehensive summary and a detailed index of both authors and material, with many very wonderful plates in color, considerably embellish an already most creditable volume.

The Experimental Chemotherapy of Spirillooses (Syphilis, Relapsing Fever, Spirillosis of Fowls, Framboesia). By PAUL EHRLICH and S. HATA. With contributions by H. J. NICHOLS, New York; J. IVERSEN, St. Petersburg; BITTER, Cairo, and DREYER, Cairo. Translated by S. Newbold and revised by Robert W. Felkin, M.D., F.R.S.E., etc., with 34 tables in the text and 5 plates. New York: Rebman Company.

This volume, which gives the elaborate work of Hata, which was responsible for the human application of "606," concerns itself very largely with experimental animal inoculation and therapy, and hence is less of interest to the busy syphilologist than the work of Wechsellmann or of Bresler. Hata describes in great detail many of his elaborate experiments upon mice with relapsing fever and his treatment of the mice so infected by the various arsenical derivatives, beginning with atoxyl, arsacetin, arsenophenylglycin, etc., to salvarsan.

Then he takes up similar experiments with spirillosis of fowls and others of syphilis with rabbits, inoculating them either on the cornea or scrotum. The favorable results are noted in a comparative way and are not only very instructive, but also most illuminating as to the painstaking labor and care which has been devoted to this branch of therapy.

In relapsing fever in mice it was found that "606" possessed remarkable curative properties, that reinjection was not always as efficient as single adequate doses, and that tremor, dancing and other amauroses, readily induced by various other arsenic compounds, have not been noted with animals treated by "606."

In spirillosis of fowls, some of the same remedies were employed, and here again "606" gave most efficient curative results.

In the experimental studies of syphilis with rabbits, to whom syphilis may be communicated as a keratitis or as an almost typical chancre on the scrotum, but the disease frequently does not develop or soon retrogresses in many cases—in these "606" gave excellent results, being cured by a single adequate injection

Nichols gives results of experiments on rabbits with framboesia, and also on apes, and "606" cured them rapidly.

Iversen also gives results of treatment by "606" of humans suffering from relapsing fever, and finds 92% free from disease by a single injection and suffering no relapse.

Ehrlich concludes with a very clear discussion as to the theoretical considerations and motives leading up to the discovery of "606" as a curative agent, showing very clearly how it is the result of a long series of painstaking experiments and thought and is in no sense an accidental find.

The book amply repays the reader for the time consumed in its perusal and contributes very materially to the knowledge of this very wonderful remedy.

The Treatment of Syphilis by the Ehrlich-Hata Remedy. A Compilation of the Published Observation. By DR. JOHANNES BRESLER. Second edition, much enlarged, with the portraits of Ehrlich and Schaudinn. Translated by Dr. M. D. Eder, with an abstract of the most recent papers. New York: Reiman Company.

It is just this exactly—a compilation of the published observations in the order in which they appeared. Consequently it lacks the arrangement and finish which is noted in the volume by Wechselmann, but nevertheless is an interesting little volume which may be read at a couple of sittings, and sets forth in a very nice way the progress of the use of Salvarsan.

There is nothing here which is not included in the work of Wechselmann, and hence detailed reference is not necessary.

It is, however, interesting to note that Neisoer—the celebrated syphilographer—recommends highly its compulsory use in prostitutes and public lying-in hospitals.

Merck's Manual of the Materia Medica. (Fourth Edition.) A Ready Reference Pocket Book for the Physician and Surgeon. Containing a comprehensive list of Chemicals and Drugs—not confined to "Merck's"—with their synonyms, solubilities, physiological effects, therapeutic uses, doses, incompatibles, antidotes, etc., a table of Therapeutic Indications, with interspersed paragraphs on Bedside Diagnosis, and a collection of Prescription Formulas, beginning under the indication "Abortion" and ending with "Yellow Fever"; a Classification of Medicaments; and Miscellany, comprising Poisoning and Its Treatment; and an extensive Dose Table; a chapter on Urinalysis, and various tables, etc. (Merck & Co., 45

Park Place, New York. 1911. 493 pages. While intended for distribution in the United States, a limited number of copies have been set aside to supply requests from members of the medical and pharmaceutical professions in other English-speaking countries. Mailed on receipt of application, accompanied by postal money order for 1s. 6d. or 35 cents.)

BOOKS RECEIVED

Caesare Lombroso. A Modern Man of Science. By HANS KUR-ELLA, M.D. Author of "Natural History of the Criminal," etc. New York: Rebman Company, 1123 Broadway.

The British Sanatoria Annual. With Numerous Illustrations. London: John Bale, Sons & Danielson, Ltd., Oxford House, 83-91 Great Titchfield Street, Oxford Street W.

Transactions of the American Pediatric Society. Twenty-second Session. Held at the New Willard Hotel, Washington, D.C., May 3-5, 1910. Edited by LINNAEUS EDFORD LA FETRA, M.D. Volume XXII. Reprinted from Archives of Pediatrics, 1910-11. New York: E. B. Treat Co., Publishers, 241-3 23rd Street.

Report From the Pathological Department. Central Indiana Hospital for Insane. 1906-7, 1907-8. Fiscal year 1908-09. Indianapolis: Wm. B. Burford. 1910.

Bibliographie des Sciences Medicales. Paris: J. B. Bailliere & Fils, 19 rue Hautefeuille.

Handbook of Treatment for Diseases of the Eye. By DR. CURT ADAM, Assistant Surgeon in the I. University Clinic for Diseases of the Eye, Berlin. With a preface by PROF. VON MICHEL, Berlin. Translated from the Second German Edition 1910, by WILLIAM GEORGE SYM, M.D., F.R.C.S., Ed. and E. M. LITHGOW, M.B., F.R.C.S. Ed. With thirty-six illustrations. New York: Rebman Company, 1123 Broadway.

Makers of Man. A Study of Human Initiative. By CHARLES J. WHITBY, M.D. (Cantab). Author of "The Logic of Human Character," "The Wisdom of Plotinus," etc., etc. With forty-seven half-tone and other plates. New York: Rebman Company, 1123 Broadway.

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Selections

Encephalitis After Whooping Cough

Von Domarus. *Deutsches Arch. f. klin. Med.* The patient, a healthy girl of six with no previous history of fits or nervous disorders, had a severe attack of whooping cough. Eight weeks later the cough was lessening and the patient better, when fever and nocturnal delirium came on, and next day flaccid paralysis of the right arm and leg was noted, with aphasia; convulsions and stiff neck were not observed, nor was hearing impaired. The child's mental state seemed normal; the mother noted paresis of the right side of the face a few days later. The flaccid limbs shortly became spastic, some three weeks later, when the first attempts at speech were made. Seven weeks after this the child was brought to hospital, and shewed the typical picture of a right-sided cerebral hemiplegia; during the next four months slow progress towards recovery was made. The eyes and their movements were normal, and no sign of nasal or aural disease was made out. Athetosis was not observed. The author believes the case to have been one of encephalitis due to the bacillus of whooping cough, which is morphologically and culturally very similar to the *B. influenzae*.—*The Medical Chronicle*.

The Importance of Aorto-Pericardial Friction Sounds

Grocco (P.) *Riv. crit. di Clin. med.* The author draws attention to the importance of the faint or very faint murmurs heard over the intra-pericardiac portion of the aorta, in cases of aortic disease. Sometimes they are systolic, sometimes diastolic; they are very superficial, varying with the position of the body and with the pressure of the stethoscope. They are best heard over the sternum up to the level of about the second costal cartilage, sometimes over one part of it, sometimes over another, and usually near the upper part. They are best heard when the patient holds his breath, but are far from easy to catch, inconstant, variable, crepitant or rustling or scratching in character. They are evidence of aortitis, acute or chronic; and are apparently not identical with Huchard's pericarditis sicca secondary to aortitis. They must not be confused with the friction sounds of pericarditis without aortitis, or with pleuro-pericardial fric-

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THE PRESENT STATUS OF RADIUM THERAPY*

BY W. H. B. AIKINS, M.D., C.M., L.R.C.P. ENG.,

Consulting Physician, Toronto General Hospital, Toronto Hospital for Incurables, King Edward Sanitarium, etc., etc.

In collaboration with

F. C. HARRISON, B.A., M.B.,

Assistant in Pharmacology, University of Toronto; Physician, Toronto Hospital for Incurables; etc.

Radium therapy, which has been placed on a solid scientific basis through the acumen and high attainments of Dr. Louis Wickham, of Paris, Director of the Laboratory for Radium Research, has made rapid advances during the past year. His epoch-making contributions are receiving a full consideration from the scientifically educated physicians of the world.

At first radium was regarded with prejudice and much medical skepticism, but greater knowledge of its usefulness and the authoritative facts presented by Dr. Louis Wickham have impressed the profession with the importance of this physiologic agent.

He now divides the method of administering radium into two classes:

- (a) *Methodes Emaniferes* or the use of emanations where the radium is spent. Here the principal means of action are the alpha rays, which are present in the proportion of 90 per cent.
- (b) *Methodes des Rayonnements* or the ordinary way of using the radium rays, the radium being used in a varnish on a metal surface, or in tubes which do not permit the escape of the gas emanation, and the result is that the alpha rays are mostly retained: the beta and gamma rays being able to penetrate more deeply and freely are the

*Read at the meeting of the Ontario Medical Association, Niagara Falls, May 31, 1911, with lantern slide demonstration.

active agents. The radium apparatus retains its powers and does not seem to exhaust.

RADIO-ACTIVE WATERS.

The salts of radium are the source of spontaneous and continuous emissions of rays, and it is this radiation which produces the phenomenon radio-activity. Mineral waters which are radio-active at the source lose their radio-activity rapidly, but can have it restored to them in a permanent way in the same proportion as when coming from the spring through the incorporation of a given quantity of radium.

In the last few years much work has been done in examining the waters and sediments of mineral and hot springs for the presence of radio-active matter. A large number of springs have been examined by different observers in France, Austria, England, and Germany, and on this continent, and in nearly all cases the radium emanation has been found in measurable amounts. The mud deposits from many hot springs showed great radio-activity, and close examination showed that the activity was due to radium. Prof. McLennan,* of Toronto, found radium emanations and radio-active matter in deep wells.

RADIO-ACTIVE BATHS.

It has been proved† that the active agent in the baths is not radium itself, but the emanation which radium produces. Emanation is a gas: it cannot penetrate the epidermis of the body as such, but is readily absorbed by the lungs and by the mucous membranes of the digestive tract. Emanation can, therefore, only act in the bath by passing out of the water into the air and being inhaled. When water containing emanation is drunk, a part of the emanation is taken up in the inspired air, and another part is absorbed from the stomach and intestines. Emanation behaves like every other gas which is not a normal constituent of the body. It is excreted to a very slight extent through the kidneys and to a large extent in the expiratory air.

When treatment is carried out by baths, the absorption is only continued as long as the patient remains in the atmosphere laden with emanation from the bath water, and the foreign gas is excreted immediately. On the other hand, when it is carried out by means of drinking waters, the absorption takes place slowly from the intestine, and the body is being constantly supplied with fresh doses of emanation for three or four hours after a single dose. When the patient is given from three to five doses

*Radio-active transformations, by E. Rutherford.

†Prof. Hls. of Berl'n, "British Medical Journal," Feb. 4, 1911.

during the day emanation can be detected in the expiratory air at any period of the day.

In 1905 Gottlieb,* of Joachimsthal, where a radium mine is situated, found marked medical results amongst the miners, who merely worked in and about the water from the pitchblende, and still more remarkable ones when in addition the water was drunk.

Dautwitz added pitchblende to existing indifferent thermal waters, with much enhanced results. Since then continuous success has been reported by others. The results in general may be summarized as follows:

1. Greatly increased diuresis and excretion of uric acid.
2. Largely increased carbonic acid exhalation from 20 to 60 per cent.
3. Lowered blood pressure, especially in arterio-sclerosis.
4. Decreased blood viscosity.
5. Great improvement of gastric and duodenal digestion.
6. Marked solvent action on gouty deposits.
7. The dislocation of uric acid and its salts into carbon dioxide and ammonia.
8. Inhibition of inflammation and relief of pains in rheumatism.
9. Increase of sexual vitality.
10. Considerable influence over sympathetic nerve affections.
11. Marked results in diabetes, albuminuria and glycosuria.

Permanent Centres of Radio-activity in the tissues can be created by the injection of either the soluble salts (bromides) in water or of the insoluble salts (sulphates). Emanations are generated constantly, and a small quantity of radium thus used produces a great amount of energy. Dr. Wickham has found that the insoluble salts injected into a tumor keeps the tumor radio-active for a long time. In the circulation of the horse the blood is found to be radio-active for from six months to one year.

The dose given is from one to ten microgrammes in water—five to ten injections extending over a period from ten to twenty days. Used in this way it has also been found to be a powerful curative agent in gonorrhœa,† both male and female. The bactericidal power comes exclusively from the gas emanations.

Dr. Wickham has studied the action of these solutions upon the gonococcus and has proved that they have the power of being able to stop the development of cultures of this microbe even with a dose of one millionth of pure radium. Injections under and around torpid ulcers are found to be helpful towards a cure.

*Dr. W. Armstrong, "British Medical Journal," April, 1911.

† "The Practitioner."

Ionotherapie Radique is the name given to the new form of introducing free radium with its gas emanations free. It is the ordinary use of ions—using a continuous electric current.* The method is to place a solution of soluble radium on a linen and the linen over the area to be acted on. It is covered with the positive pole and the negative pole is placed on the other side. The current passes slowly and the radium ion penetrates into the economy. The skin is maintained absolutely intact, and the radium by a special method can be found acting in the subjacent tissues, muscle, periosteum bone or neoplasms to a depth of from five to nine centimetres—2 to 3½ inches. The same result has also been arrived at by the use of radiferous mud with the electric current.

The Radiferous Mud may be obtained from the remains of the uranium ore after the extraction of pure uranium. This material is used exactly as the natural mineral muds. It contains a great quantity of iron. The radio-activity is produced more by actinium than radium. It is very much less radio-active than is uranium, but much more so than the natural mineral muds. It can be definitely stated that there appears to be a wide field for the therapeutic use of uranium mud.

Ingestion of Radium.—Many drugs are now being prescribed with given doses of radium to increase their therapeutic power, but the matter is very much in the experimental stage, and further proof of its beneficent action when administered in this fashion is required before definite conclusions can be drawn.

SELECTIVE ACTION.

Dr. Wickham points out that the word *specific* as applied to radium in the treatment of disease is incorrect, and that *selective action* means only that special pathological cells offer an inferior resistance to the action of radium.

THE CHIEF DISEASES IN WHICH RADIUM MAY BE USED.

Radium has been used with much success in numerous diseases of the skin, such as acne keloid, acne rosacea, chloasma, eczema, ichthyosis, lichen ruber planus, lupus vulgaris, lupus erythematosus, mycosis fungoides, psoriasis, pruritus, rhinophyma, serofuloderma, seborrhœa, sycosis, tuberculosis of the skin, also in keloids and cicatrices, naevi and angiomas, certain rheumatic conditions, gonorrhœal arthritis, urethral caruncle, exophthalmic goitre, epulis, and in many non-malignant growths, such as lymphodermata, papillomata, fibromata.

A most important role, however, is in connection with the special power over certain pathological cells in cancer. And the

*Archives of the Roentgen Ray.

word cancer is used here in its widest sense, to include the whole series of malignant new growths, histologically different, including rodent ulcer, epithelioma, carcinoma, lymphosarcoma, round, spindle and myeloid-celled sarcomata. The malignant evolution of these tumors may not only be arrested for months, but occasionally these tumors have entirely disappeared, leaving the impression of real cure.



Before treatment.



Appearance two weeks later.

(Wickham and Degrais.)

ECZEMA OF THE ARMS.*

In the case illustrated an apparatus of large surface and with an activity of 600,000 was used, with a very feeble filtration. The apparatus was left in contact with the surface from one to three minutes. The next day and the day after the same apparatus was used, then followed an interval of non-treatment for eight days. In this way twenty-seven minutes were given, and in the course of two weeks more the skin returned to a normal condition.

Eczema.—Radium may be employed with advantage in chronic circumscribed lichen or eczema. Wickham* recommends that in these cases the large surface apparatus should be used,

*Journal de Radiologie, Wickham and Degrais

the activity of the rays utilized being 600,000, with a very weak filtrate. This apparatus is left in contact with the lesions for one to three minutes at a sitting, similar applications being made for three days in succession. There is then an interval of eight days, followed by another course of treatment.

In slight cases there is obvious improvement after the first series, and a third series is frequently given only in order to ensure permanence of the results. Irritation of the skin is avoided by regulation of the duration of the applications. In dealing with eczema of the face pigmentation or depilation may be avoided by filtration through aluminum and the avoidance of too frequent exposures.

Bayet states that he has treated 42 cases, 41 of which were successful. He finds that relapses sometimes occur, but yield rapidly to renewed treatment. In disseminated eczema his results are not so good, but in 13 cases he reports 8 cures and 2 improvements, whilst in 11 cases of symmetrical eczema in the neighborhood of joints 10 were cured and 1 improved.

Wickham gave a child of four months two series of treatments for acute eczema, the result being permanent cure, and he reports satisfactory results in intense lichenification of the face, neurodermatitis, orbicular eczema of the lips, and palmar and plantar keratoses.

Radium is of considerable value in refractory cases, or as an adjunct to the ordinary measures of treatment, and in a fairly large proportion of cases the results are rapid and satisfactory.

Personally we have seen very great benefit in many cases of chronic eczema. It must not be overlooked, however, that hygienic measures and local drug treatment must still be persevered with. The radium acts only as an extra stimulus when ordinary measures have failed to give relief.

Pruritus.—Short applications of a naked plaque have given us excellent results in cases of localized pruritus. In one case of pruritus we had, where almost everything had been used without relief, a few minutes' exposure to the radium plaque was followed in a few days by relief of all symptoms. Another case where there was an area of hyperæsthesia on the outer side of the arm, was relieved in the same way. The analgesic action of radium is quite remarkable in ordinary neuralgias and in herpes zoster.

Psoriasis.—For psoriasis of the face and scalp or refractory patches around the elbow the following treatment has been recommended. A radium apparatus with a rubber screen is applied to the lesions, the duration of the sittings varying from three to four or five minutes in proportion to their depth. They

are repeated on three occasions, and the scales rapidly fall off, leaving only a slight brownish stain. It has been suggested that an aluminum screen may be used for the face, in order to avoid pigmentation, but we have not found it necessary to employ any screen where the exposures are of so short a duration, and the results in our cases have been very satisfactory.

Lupus Vulgaris.—Radium has been used for this and other tubercular conditions of the skin, and with very good results. It is best to use destructive action, as recurrence is not so liable to take place as when small, non-destructive dosage is employed. A non-depressed and æsthetic cicatrix is the result.

From personal observations on a number of cases we are convinced that radium therapy is most beneficial in these conditions.

Lupus Erythematosus.—In this exceedingly refractory condition Wickham and Degrais report some success, although cases have not been of long enough standing for them to be too certain as to the ultimate results. One particular case they mention is of interest on account of the use of injections of radiferous water locally, which is a method of treatment to which they have been devoting considerable attention of late.

Sycosis.—Cases have been reported, and we have ourselves seen several in which cure was greatly hastened by applications of a naked radium plaque over the affected area, other local treatment of course not being neglected.

The applications need not be sufficient to produce destruction of the hair follicles. We have found ten or fifteen minute exposures, repeated two or three times, at intervals of a few days, to be quite sufficient.

Keloid and Cicatrix.—Keloid may be easily and successfully treated by radium, which exerts a directly curative action upon the keloid tissues, and thus obviates the necessity for surgical intervention. A case is reported* in which a tumor of this nature, which had been treated by radium, was examined microscopically. From this it appeared that the remedial effect of the rays first appeared in the deeper portions of the tumor, and consisted in the formation of embryonal cells, which invaded the keloid tissue, and transformed it into new tissue. Clinically the tumor diminishes in volume, retracts and softens, leaving finally only an area of tissue which is more brilliant and clear than the normal skin, or occasionally, if the keloid is small and recent, absolutely no trace. Inflammatory reaction should be avoided as much as possible, in order to prevent telangiectasis.

If the keloid is very large it may be advisable to introduce a

*Traitement des chéloïdes par le radium (La Clinique, October, 1910).

tube of radium into the tumor itself, and in this event a weak filtrate should be employed.

In this condition the results have been particularly encouraging, as the great majority of keloids disappear under treatment, and normal function has been restored in an articulation which has been rendered immobile by keloid tissue. The rays have no effect upon cicatrices unless they contain keloid tissue. Satisfactory results are reported in more than 300 cases.

In the keloid condition which sometimes occurs subsequent to an acne radium may be used with good results. One case which we had, where there had been an acne on the nape of the neck, which resulted in a keloidal condition, was greatly benefitted by the application of a plaque screened so as to allow the harder B rays to exert their action.

Angiomata and Nævi.—It is a comparatively short time since radium was first employed in the treatment of this and allied conditions, and even as recently as 1905 very few attempts had been made to treat them by means of the Roentgen rays. At this period electrolysis was occasionally used in the slighter cases, whilst the more severe ones were submitted to surgical operations, or the lesions were destroyed by the electric cautery. This treatment was more or less ineffectual, especially in cases in which the disease was of very extensive distribution, and in these radium has been found particularly valuable, its results being almost uniformly successful. This also applies to the various forms of nævi of the skin.

It was first suggested in the year 1907* that radium should be used in the above conditions. The most important point in the technique was that, whatever the method employed, no superficial irritation should be induced, thus avoiding the danger of subsequent telangiectasis. The form of radiation which Wickham and Degrais use is composed essentially of rays with slight power of penetration, with a very weak filtrate, and in some cases they have adopted the cross-fire method. The radium is applied in sittings, varying in duration from one to several hours a day, on eight to twenty consecutive days, and there is an interval of three months between each series. Treatment is continued in this way for one, two or three years. They have now treated more than 800 cases, and in the great majority of these cases the condition has completely disappeared, although some of them were regarded as practically incurable.

The most interesting result we have had with these conditions is shown in the accompanying plates. As can be seen, the face was covered with angiomatous tubercules, and the lip was greatly

*Traitement des angiomes par le radium (Revue de Médecine).

distorted. The second photograph shows the result in five months' time. The nodules had disappeared and the staining was much paler, and will, we believe, tend to become more so, as the effect is often long-continued in these cases.

One other case of a cavernous angioma of the right cheek, where several operative procedures had been attempted in infancy, is showing quite a perceptible shrinkage. It may be a year or more before complete reduction is secured, but there is every probability of a very good ultimate result.

Several port-wine stains have faded, and others we are now treating are disappearing gradually under applications of short duration at intervals of five or six weeks.

The important point in these conditions is not to be in too great a hurry. Excessive dosage may leave pigmentation. Care



Angioma before treatment.



Appearance five months later.

(Authors' collection.)

must be taken also to guard against the formation of telangiectases. Patience in waiting for results must be exercised. It may be some months before any result at all is to be seen.

Goitre.—Owing to the marked alterative effects which the penetrating radium rays have on the tissues, it might be expected that some action would be exerted on the various hypertrophies of the thyroid gland. We were first led to investigate this action by a cystic growth in the isthmus of the thyroid in a young girl. All sorts of local applications had been used without effect. Just to try it we applied a radium plaque, well screened, over the tumor, and were more than gratified to see a steady retrogression in the mass, until at present there is no evidence of enlargement.

Abbé has reported a case of exophthalmic goitre cured by the insertion of a radium tube into the gland. And Wickham reports

the same result from the use of plaques in the cross-fire method.

We have ourselves seen two exophthalmic cases in which the nervous symptoms and tachycardia disappeared, and in which the thyroids considerably decreased in size. In one case the circumference of the neck decreased from 15 to 13 inches, and pressure symptoms, which had been quite marked, were completely relieved, while in the other, where the condition was not so marked, there was a decrease of half an inch in the circumference of the neck. Five other cases of parenchymatous enlargement of the thyroid have been reduced, with great relief from pressure symptoms.

Epulis.—Radium has also been employed in the treatment of this condition, and satisfactory results are reported by various writers.

Wickham and Degrais* have treated it by the cross-fire method, the technique employed being as follows: "The treatment was given in sittings, consisting of one hour each, these being repeated ten times in the course of fifteen days. The first series of applications resulted in a very obvious diminution in the size of the tumor, and three more courses of treatment were subsequently given, with an interval between each series. When the applications were discontinued the only traces that remained of the growth consisted of a slight projection on the inner surface of the maxilla, and a slight swelling between two of the teeth, which occupied the site of the tumor, and one subsequent application of radium resulted in the complete disappearance of this. All hæmorrhage had long since disappeared." They are of the opinion that the cross-fire method has the advantage of inundating the tumor with the rays down to its deepest layers.

Radium treatment represents an advance in the treatment of epulis, and it possesses the advantage of causing less destruction to the teeth and maxilla than does surgical treatment.

TREATMENT OF CANCER.

In regard to the treatment of the various kinds of neoplasms radium possesses the following advantages in relation to the other forms of treatment: The rays penetrate with facility to the deeper tissues, the apparatus is easy to manipulate, and the technique of the treatment simple. The apparatus is fixed upon the tumors themselves, and the tubes may be placed in juxtaposition, superposed, or placed in apposition. The latter is known as the "cross-fire" method introduced by Dr. Wickham. If the growths are deeply situated the radium may be introduced into

*Traitement de l'epulis par le radium (Wickham and Degrais, Gazette des Hôpitaux, 1910).

the tumors themselves by surgical measures, or the tubes may be brought into contact with the affected areas by means of celluloid containers passed through natural or artificial orifices.

Wickham and Degrais state that they have obtained the most satisfactory results in cases of this nature by the use of the largest amount of radium compatible with necessary therapeutic precautions, and by recommending surgical operation as often as possible. It is, of course, obvious that the influence of radium is limited to the local tumor, and that metastases may develop even when it has retrogressed under this method of treatment.

The opinion is expressed that where extensive surfaces are involved in the growths, treatment by the Roentgen rays is preferable to that by radium, although they are convinced that in suitable cases the latter forms a valuable addition to the various therapeutic measures which have been recommended for cancer.

In superficial cancer, which includes epithelioma, Paget's disease and rodent ulcer, radium is the treatment of election, and has a wide field of application. The technique is simple, and the results are extremely satisfactory, cure being obtained in practically every case. The apparatus is applied in a series of sittings, each of a few hours' duration, it being covered by a single layer of rubber. This produces an intense reaction, and in about a fortnight the area is covered by a new scab, which subsequently falls off, leaving a good cicatrix five weeks after treatment, and there is no subsequent telangiectasis or reaction. Deeper lesions require several stronger applications.

This method has been used by several observers, and the patients have remained perfectly healthy for several years. One case of epithelioma of the pubis is now in a condition of perfect cicatrization six years after treatment. A case of recurrent serpiginous epithelioma of the scalp is reported complicated by suppurative peripheral folliculitis developing upon a primary X-ray cicatrix, and it is stated that the area has been perfectly healthy since the application.

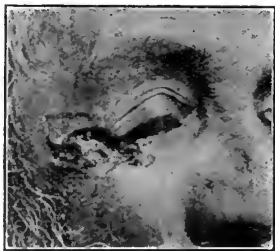
Radium is especially successful in dealing with epitheliomata of the nasal cavities, and especially so when it affects regions of the vicinity of the eye and the conjunctivæ. In the latter locality complete destruction may be accomplished without danger to normal tissues.

Good results have also been reported in cases of leucoplakia, which is frequently present in conjunction with or as a precursor of epithelioma. In the more chronic cases of cancer we have found radium to exercise a most ameliorating and palliative action.

Rodent Ulcer.—This is best treated by the application of the

radium plaque covered by rubber in a series of applications. In some cases radium has been successful when no result has followed long-continued treatment by X-rays.

This is, of course, the condition *par excellence* of radium treatment. In twenty-six cases we have as yet failed to see one which would not respond well to the applications. In some, of course, which were very extensive the result from the cosmetic standpoint has not been ideal, but the progress of the disease has been apparently arrested in all. In the smaller ulcers a very excellent, smooth, moveable surface is left after treatment.



Rodent ulcer before treatment. Appearance seven weeks later.
(Authors' collection.)

We have found in all cases where X-rays had previously been used that reaction and subsequent cicatrisation was much more slowly obtained. Exactly why this should be it is hard to say, but it is a point to be remembered.

Cancer of the Breast.—Radium treatment has resulted in relief of pain in a few cases of inoperable cancer in this region, together with an apparent arrest of the progress of this disease. Wickham and Degrais* report the case of a very old person, treated in 1907 for inoperable cancer, in which the lesions have retrogressed, and the patient still continues in good health. In another case it relieved intense pain, and caused material improvement in the condition of the patient, who appeared to be at the point of death when the treatment was commenced. Bayet reports a case of recurrence, to which the X-rays were unsuccessfully applied. Radium treatment resulted in three weeks in considerable reduction in the size of the tumor, which was also much less adherent, and the cessation of pain. The condition has remained stationary until recently, when there has been some increase in the size of the tumor.

Radium treatment has also been used in these cases as a preliminary measure to operation, and has apparently improved the condition of the operation field, and Wickham states that in a

*Le radium dans le traitement du cancer (Paris Medical).

case treated in this manner there was no indication of recurrence eight months after operation. He is convinced that intense preliminary radiation diminishes the malignity of the operation area.

Cancer of the Mouth, Etc.—In this region cancer of the tongue is most resistant to treatment, but marked improvement has been reported in cases where the lips, palate, gums, etc., were affected. Here also radium treatment may be a preliminary to extirpation. In regard to the tongue Wickham uses radium after an operation has been performed, recurrences being very common in this organ. The introduction of tubes into the tongue has also been recommended. All neoplasms which border on the buccal mucous membrane must be treated with great circumspection. Gaucher has pointed out that caustics which are suitable for the treatment of cutaneous cancers are contra-indicated for cancers of the mucous membrane, as they stimulate rather than arrest their development, but cancers of the mouth have been found to be appreciably amenable to radium treatment when proper filtration is used—employing only the ultra penetrating rays—and this can be accomplished when appropriate screens of lead and paper are placed between the apparatus and the surface to be acted on.

It is well, however, not to be over optimistic in dealing with cancerous conditions within the mouth or of the gullet or larynx, and surgical procedures should be advised and adopted wherever feasible in such cases.

Cancer of the Pylorus.—Gaultier and Labey have introduced a curved probe through the orifice left after gastro-enterostomy, and applied radium to the pyloric region by means of a tube contained in it, a second apparatus being placed simultaneously on the wall of the abdomen (cross-fire method). Eighteen months after the treatment the patient was in better health than he was previous to its commencement.

Cancer of the Rectum.—Wickham reports a case in which there was a large hæmorrhagic and suppurating cancerous mass in the rectum, with almost complete obstruction of the duct. Treatment resulted in gradual disappearance of the hæmorrhage and partial relief of obstruction.

Cancer of the Prostate.—A number of cases have been reported favorable to the effect of radium in this condition. Application may be made by way of the urethra and rectum.

Cancer of the Penis.—Wickham and Degrais have obtained excellent results in four cases affecting this organ.

Cancer of the Urethra.—In a case of cancer of the neck of the bladder Wickham reports that after a number of applications

pain diminished, the cancer retrogressed, and fourteen months later the patient was in good condition. Abbé of New York also reports a case of epithelioma of the posterior urethra with apparent arrest of the disease by radium.

The pain and bleeding in cancer of the prostate is favorably influenced by the penetrating rays applied by means of a tube in the rectum.

Cancer of the Uterus.—Radium treatment facilitates operation by tending to reduce the thickness of the neoplastic tissues. It has also been employed with the object of consolidating the cicatrix after total extirpation, and for treating inoperable recurrences. Satisfactory results have followed the introduction of tubes into the body of the uterus, or the application of a flat radium apparatus to the surface of the cervix. Relief has sometimes been obtained in inoperable cancer and even diminution in the size of the tumor.

Several observers have reported the alleviation of pain and cessation of hæmorrhages and discharge following the use of radium in this condition.

Sarcoma.—Wickham and Degrais have treated a considerable number of cases of sarcoma by applications of radium. One patient had had several operations for recurrent fibro-sarcoma, the last recurrence being so extensive that the case was regarded as inoperable. In four months a series of large sarcomata, which involved the region of the shoulder, were levelled as a result of the treatment. In a case of osteo-sarcoma of the tibia amputation was recommended, but radium treatment resulted in retrogression of the tumors and renewed solidity of the limb. They also report a case of lympho-sarcoma of the neck, which disappeared under radium treatment, but which had produced metastases.

Abbé reports a case of myeloid sarcoma of the lower jaw, which disappeared six years ago under radium, and has not since returned.

We have had one case apparently arrested for ten months, where a small, round-celled sarcoma quickly returned after operative procedure. Some hard fibrous masses are to be felt now, but the growth seems to be checked. This was treated with tubes inserted directly into the tumor mass. The closest watch should be kept on such cases, as, of course, one can in no sense regard the condition as absolutely cured.

PRE- AND POST-OPERATIVE USE OF RADIUM.

In operating for the removal of malignant growths, it has been found that the vitality of the cancerous tissues is very much

lessened if the area is first given a preliminary radiation. After operation radium should be again applied to destroy any neoplastic cells which have escaped the scalpel. It has been found that recurrence is much less likely to take place where these precautions are taken. This opinion has certainly been borne out by three cases of sarcomata we have had, in two of which recurrence had taken place twice previously, but did not occur after the use of radium. The third case was a sarcoma of the axilla where the surgeons prophesied recurrence and held out practically no hope for the patient. Under radium treatment a slight thickening about the scar has entirely disappeared, and there is no evidence of the return of the growth. The same treatment has been used in cases of carcinoma. It is well to radiate the area every few months during the first year after operation and less frequently during the second and third year.

134 Bloor Street West.

AN EXPERIENCE WITH A MILK CHARITY.*

DR. HEURNER MULLIN, HAMILTON.

During the past two years we have been conducting a Milk Charity on the lines laid down by the Department of Health in Rochester, with some slight modifications of our own.

The advantage of such a work in stimulating an interest in the "Clean Milk" Campaign must be manifest to all, and such was the main object of our work. The suggestion that \$1,000 a year should be sufficient to feed the number of babies likely to demand the supply has not been realized, and both years it was found necessary to much exceed this limit.

I wish, therefore, to briefly outline the work as conducted by the members of the Hamilton Milk Commission, under the Victorian Order of Nurses, in order that our failures may present a warning to others and that where we have been successful from another standpoint we would like others to follow.

Perhaps a short history of our scheme here should first be told. Briefly, some years ago Dr. Langrill, then Medical Health Officer and now Medical Superintendent of our City Hospital, brought before our Medical Society the question of obtaining a supply of milk guaranteed safe for infants. Nothing was done until the frightful mortality of the summer months reached such a height in 1908 that we realized something should be done. As part of our Medical Society programme two years ago, this matter was again taken up. An effort was made to interest the Board of Health and City Council, and after various preliminary meetings, at which details were discussed, a combined deputation representing the Board of Health, Medical Society and various charitable organizations, waited on the Finance Committee of the City Council, asking for \$1,000 towards a campaign for clean milk and including the establishment of depots at which might be distributed modified milk for infant feeding. This was refused, as there were no funds on hand out of which such an amount could be set aside. These facts will illustrate how hard it is to get funds from municipalities for this kind of work.

The ladies of the Victorian Order of this city were so thoroughly impressed with the necessity for this work that they immediately guaranteed the necessary funds. A combined committee, consisting of representatives from their own organiza-

*Read before the Ontario Medical Association at Niagara, 1911.

tion, Medical Society and the Board of Health, immediately took up the work of obtaining equipment and other details necessary for the establishing of these depots for infant feeding and preparation of the milk suitably modified.

A farm was chosen, having necessary requisites as to cleanliness about the stables and surroundings. The cattle were tested with tuberculin and certified healthy by competent veterinary.

In the way of equipment we had built and put together on the farm two portable shacks, each about ten feet square. One of these was used for a washing and sterilizing room, the other for modification of the milk and packing bottles for delivery. We obtained a second-hand boiler and had a box made out of plain lumber, and this was used as a sterilizer, using free steam generated by the boiler.

The bottles were obtained of a pattern known as sterilizer bottles, cylindrical in shape, graduated in half ounces, and each holding eight ounces. Owing to the lateness of the season we had to be satisfied with the ordinary type, and we used ordinary corks and covered the same with melted paraffine.

The filling of the bottles with milk-sugar, water and milk in proper proportions was attended to by our trained nurses on the farm, as well as the bottle washing and sterilizing of all the utensils and gowns necessarily used in all these operations. One man assisted the nurses on the farm, carrying water, ice, etc., and a boy with a wagon took charge of delivery to the city depots. The cattle were thoroughly washed about the udders and flanks before each milking; the milkers were supplied with sterilized gowns; they used sterilized milk pails of a covered type, having a small opening in the lid which was covered with a filter consisting of absorbent cotton and cheesecloth. As soon as the pails were filled they were carried at once to our milk house and chilled as quickly as possible by immersing the bucket in ice water; the milk was then dispensed in bottles as rapidly as possible, packed and iced ready for shipping to the city, which was about one hour's drive.

We located one of our depots in a building on the Market Square, known as the Butter Market; the other in the out-patient department of the City Hospital, and the milk was sent in each morning to our depots for distribution. There the babies were weighed by the nurse in charge and the appropriate formula advised. Literature advising the mother with regard to home care was freely distributed. Through the kindness of one of our retail grocers, the milk was delivered to the homes of some fifty or sixty babies daily, free of charge.

The milk was sold at a nominal price of one cent per bottle, regardless of amount in each. This was found to be ridiculously low, as many mothers were found to be getting milk put up in separate feedings and bottled under the strict aseptic precautions at the rate of five cents per quart. However, the rapid increase in the demand justified the low price for introductory purposes. There were only two mothers who were unable to pay the small amount asked, and these were provided for by contingency funds arranged for by one of the ladies. Although the market price for wholesale milk is 18 and 20 cents a gallon here, the farmer insisted on 7 cents a quart, and you will see that we did not make much money at that price.

The second year we were more fortunate financially, and began work with nearly \$2,500 subscribed.

When the time came to begin our work (the second year) we found it impossible to obtain milk from the same producer or any other producer in this locality of sufficient guaranteed standard as should satisfy the requirements for certified milk. Under these circumstances it was necessary to move our plant into the city and obtain a supply of certified milk from Erindale, some 25 miles away. The evening milking was shipped in bulk via the Grand Trunk, suitably iced, in special containers, and reached our depot at the city here about 7 o'clock p.m. The plant in the city was set up on the property owned by one of the Victorian Order, and a more elaborate equipment for modification and refrigeration was arranged for. This cost a good deal of money.

This second year we arranged for more depots where the people might come for the milk, and had to depend on these in the absence of any assistance for delivery. Depots were established in the west, north, east, at the City Hospital and at the central modifying plant. The milk was distributed to these and hours arranged so that the babies could obtain their milk before 12 noon each day.

The bottles ordered this year were after the pattern used in Rochester, and with special shoulder for gun-wad plug and over this we placed printed label with central letter indicating the formula.

Food Formula.—We have not gone in for fancy modification as recommended by the Boston school and others, but have trusted to simple dilution as advised by the later German workers. Fair criticism might indicate that some of these formula are low in fat, but this certainly is not an important feature in the light of the present teaching. We have made no effort to pasteurize the

milk, but merely to handle certified clean milk under the strictest possible conditions as to cleanliness.

From the above you will see that we have tried two systems of operation: (1) The farm; (2) the city plant.

In the case of the former, the immediate supervision of all steps in the operation by the nurse in charge, and the early bottling and chilling of the milk, in the individual feeding, and, added to this, the delightful surroundings and of the clean, fresh country air, are certainly features which speak loudly in favor of this plan; but against it are these important disadvantages: the inaccessibility, the extra labor of shipping filled bottles into the city and returning same to the farm to be washed by the small staff in charge, the limited water supply and drainage facilities, and also the added cost of shipping ice and other required supplies on short notice.

The chairman and others worked overtime and their horses and carriages and motors were liable to be found on the road at any time from 4 a.m. to 12 p.m.

In the second plan the committee were given the use of a storage warehouse and office in the centre of the city, where the plant was set up as already referred to. After the season's work was well started the G. T. R. strike added greatly to the inconvenience of obtaining the milk in bulk from a distance by the steam road. The hour of arrival of the milk had to be planned to suit the delivery on Sunday, when only a limited service was in operation. Then, again, the bottles had to be kept over the night in an improvised refrigerator and delivered to the depots early the following day. A large staff was engaged in order to accelerate the modifying and bottling operation in the heat and under conditions which could hardly be considered ideal.

I append for your examination a summary of our bill of expense for these two years, and hope there may be some features of interest.

1909—July 21st to Sept. 15th.

Construction—

Carpenter	\$207.00	
Plumbing and Fitting	94.23	
Boiler	30.00	
		<hr/> \$331.23

Outfit—

Wire Baskets	\$ 46.70
Tinware	32.52
Bottle Washer	25.00

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Bottles	128.05	
Boxes	29.80	
Furniture	10.50	
Linen, Cotton and Gowns	33.25	
Blankets and Oilskin	6.89	
Sundries	13.15	
	<hr/>	\$325.86
<i>Printing, etc.—</i>		
Printing	\$ 71.10	
Signs	12.00	
	<hr/>	\$83.10
<i>Postage</i>		6.50
<i>Maintenance—</i>		
Ice	\$ 42.55	
Milk	145.60	
Gas	28.55	
Sund. Brushes		
Groceries, Paraffine		
Corks	30.01	
Milk Sugar	32.60	
Laundry	13.07	
Tent	4.00	
Livery	12.60	
	<hr/>	\$308.98
<i>Salaries and Board—</i>		
Nurses	\$288.58	
Man	32.50	
Bookkeeper	9.00	
Board (Nurses and Man)	44.00	
	<hr/>	374.08
<i>Delivery—</i>		
Boy and Horse	59.00	
	<hr/>	59.00
		<hr/>
Total for 1909.....		\$1,488.75
1910—June 20th to Sept. 15th.		
<i>Construction—</i>		
Carpentry Work	\$166.58	
Plumbing and Fitting	68.19	
Tinsmith—Drip Pans	28.29	
Water Heater	7.00	
Electric Wiring	28.89	
Painting and Kalsomining	7.00	
	<hr/>	\$305.95

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Outfit—

Wire Baskets	\$ 22.20	
Bottlewasher, Lathe and Motor.....	12.50	
Scales	38.50	
Furniture	19.93	
Tinware	5.80	
Tin Boxes	5.65	
Wood Boxes	8.00	
Bottles (Freight and Duty).....	343.67	
Bottle Filler	25.00	
Bottle Rinser	10.50	
Linens, Towels and Gowns.....	21.62	
Sundries	12.12	
	<hr/>	\$525.49

Printing 135.15

Signs 6.50

Advertising (for help)..... 2.27

Maintenance—

Ice	\$ 71.26	
Milk	278.46	
Supplies—		
Milk Sugar	60.10	
Rubber Bands	29.00	
Grocery Sundries	4.55	
Electric Light and Power.....	6.48	
Telephone	22.60	
Gas	18.40	
Express and Livery	7.76	
	<hr/>	\$498.61

Salaries—

Two Nurses (including board, laundry and car fare)	\$360.98	
Bookkeeper (including board, laundry, car fare)	120.76	
Scrub Woman (for bottles)	187.56	
Man	164.85	
	<hr/>	\$834.15

Delivery—

Boy and Horse	\$120.00	
	<hr/>	\$120.00

Total for 1910 \$2,428.12

An inspection of these lists will readily show that the great bulk of the organization and expense of the work had to do directly with the modification and bottling process. This, without any proper system of management other than voluntary aid, led to many irregularities and an apparent waste of money. It is not fair to expect medical men or anyone else to devote much of their time and attention to details of administration when they have their daily business duties to perform.

It is not possible to expect that the average trained nurse can on short notice be turned into a business manager, nor is it likely that in the short season of operation that a competent staff can be selected at first choice.

WORK DONE.

During the first summer there were bottled and shipped and dispensed to these mothers some 39,000 feedings, using 2,080 quarts, and during the height of the season as many as 125 were coming daily.

During the second year we soon reached this number and were shipping as many as 850 bottles daily. We reached a total of 60,000 during the season, using 6,484 quarts in all.

In the Report of History and Development of Milk Charities in the U. S. A., 1910, J. W. Kerr (P. H. Report No. 50) most of the references to mortality are made on a "one month under care" basis, and in these places the work of the Milk Charity is conducted during the whole of the year.

It is manifestly unfair to base any claim in this matter, either favorably or otherwise, when the work of the depots is only conducted for the worst part of the summer, and this only for three months.

I present the record as it is for criticism:

VICTORIAN ORDER DISPENSARY.

Mortality Record for 1909.

- 11 cases Cholera Infantum.
- 2 " Cerebro-Spinal Meningitis.
- 1 " Chronic Indigestion.
- 1 " Heart Disease.
- 1 " Carbolic Acid Poisoning.
- 1 " Premature (six days old).
- 3 " Well when milk supply stopped, but died within one week.

in Hamilton there were 91 deaths, as compared with 129 of the previous year for the same period.

Mortality Record for 1910.

Taking milk for less than 3 days—

4 cases of Cholera Infantum.

Taking milk over one week—

7 cases Cholera Infantum (2 irregular).

1 “ Spina Bifida.

1 “ Pyaemia.

1 “ Broncho-pneumonia.

1 “ Tuberculosis of Lungs.

15

Died after discontinuing milk supply—

Had stopped 4 days 1 case Cholera Infantum (came once).

“ “ 1 week 1 “ Cholera Infantum (after Sept. 15).

“ “ “ 1 “ Cholera Infantum (came once).

“ “ 2 “ 2 “ Cholera Infantum.

“ “ “ 1 “ Pneumonia.

“ “ 3 “ 1 “ Cholera Infantum (came only a few days).

“ “ 4 “ 1 “ Entero-colitis (came once).

“ “ 4 “ 1 “ Cholera Infantum (came once).

“ “ “ 1 “ Marasmus (on milk less than one week).

“ “ “ 1 “ Cholera Infantum (on milk less than one week).

11

Total deaths while on milk 15

“ “ after stopping 11

26

Total deaths in Hamilton (1910) 127 (during July, Aug., Sept.).

It is rather difficult with the figures available to go into further details regarding the mortality of the babies supplied with this milk, or make any satisfactory comparison with the general conditions as found throughout the city. Nor can we compare the results of the two seasons' work. In the first case we began late in July, when the summer was at its worst as regards heat: whilst in the second we were more fortunate, in that we began earlier, June 20th.

With the staff available no complete system of records could

be properly followed, as there was no time left after weighing and attending to ordinary clerical duties, most of the time was spent in handling bottles and giving the mothers advice. During the second year one of the nurses devoted a part of her time to visiting the homes in order to follow up some of the sick babies, or to try and discover why certain mothers discontinued the supply.

While we have little to show in the way of actual results, it occurred to me that these experiences might be of value in a negative sense, having used, as we did, two different plans, and having discovered the difficulties with each.

So thoroughly dissatisfied were we with the work accomplished by these systems as carried out that one of our members went to New York and another to Cleveland. In both of these places the plan of providing "ready-made-to-order" food has been discarded in favor of a plan of "home visitation and instruction," and we have decided to follow the lead.

As the Victorian Order did not wish to continue this good work under their own organization, we have interested a number of their members personally, and with them a large number of prominent business men, and we can now report that we have under way a new organization called "The Babies' Dispensary Guild," which proposes to carry on the work as managed in Cleveland during the whole year, and this on what appears to be a satisfactory and permanent basis.

Under this plan we have provided for the establishment of the Central Dispensary, where mothers may bring their babies at a stated hour for examination and advice as to feeding and general care.

A physician will be in attendance daily and is expected to investigate both the social and medical side of each case, and not to consider himself merely a diagnostician or a dispenser of milk.

If a baby comes with some serious illness (not incident to improper feeding) the case is referred at once to the family physician or to the hospital or other institutions for treatment.

A nurse will also be in attendance at the Dispensary daily, and will follow each of these cases into the homes, first of all to determine the financial standing of the family, and to make a definite report on blanks provided, showing whether they are worthy or not. The nurse will then explain to the mother how to carry out the physician's instructions, and particularly the preparation of food, and will give other advice which will probably improve home surroundings.

This is probably the leading feature and advantage in the nurse's daily visit. She establishes herself in their confidence, and if she keeps her eyes open can often render valuable aid in directing other members of the family to institutions or physicians long before they of themselves would have seen the necessity to go.

Later she pays other visits to each home weekly or monthly, according to the necessity in each case, and makes notes of the same, which must be entered in the history record by the clerk at the Dispensary.

There is also provided a milk delivery system, whereby certified milk bottled in pints and quarts will be sent direct to the home.

A clerk, a thorough, capable woman of business training, will have full charge of business affairs of the guild under the direction of a small board of directors. It will be her duty to keep in order all records and histories of each case, correspondence and literature.

It is proposed to include a system of co-operation with other organizations and institutions interested in charitable and relief work, and also to bring to the attention of the Board of Health cases of suspected infectious disease, and likewise conditions of grossly unsanitary nature.

We have at least demonstrated in this locality the importance of good clean milk for infant feeding. There has been a widespread general interest in the whole question of our milk supply; the educational value has been of the greatest benefit. We have created a demand for "Certified Milk," and have had for some months past a regular supply coming in from Erindale.

THE TROPICS AND HEALTH.

BY DOUGLASS W. MONTGOMERY, M.D., SAN FRANCISCO.

I had often heard of the lassitude caused by dwelling in the tropics, but did not realize the full force of the expression till after spending a few weeks in Rio de Janeiro.

Rio is situated, not in the heart of the tropics, but just on the border. Though the temperatures do not run very high—rarely above 95° F.—yet the mid-day sun is strong enough even in June, which is a winter month in the southern hemisphere, to make walking an undesirable form of exercise. The heat is oppressive, as it is that of a tropical sun beating down into a moisture-laden atmosphere. The harbor is formed by a deep valley in the chain of mountains that runs along the Brazilian coast. It is not, as its name would indicate, a river, but an arm of the sea running in upon the land, and the city is situated on a narrow strip of level beach lying between the hills and the bay. Rio, therefore, is completely surrounded by high mountains except to the southeast, where the bay leads out to the ocean. From the hills above the city the scenery is of the grandest and loveliest in the world. The high mountains and deep valleys are clothed with a dark green, luxuriant tropical verdure, that makes a charming setting for the villas and houses, tinted in all sorts of bright and vivid whites, reds, oranges and light blues. Far below are the bright waters of the magnificent bay. This is all seen through the rich colorings of a moisture-laden atmosphere, which acting like a spectrum, makes visible the warmest violets and blues of the sun's rays. As a last touch of enchantment there is the French grey, transparent haze, that is found nowhere but in the tropics, and in Rio is at its best. As you stand high in the mountains the fog rolls in at your feet, or forms a whisp against the Sugar Loaf or thickens among the trees in the valleys and at last closes out the view of the bay and the city. It insensibly forms a great billowy ocean of the purest white, with the tops of the verdure-laden, rounded granite hills pointing up through it like islands. The people of Rio are down underneath the fog in a hot, heavy, stagnant air but you, away up in the hills, are fanned by the most delightful of fresh breezes from the ocean. The contrast, however, does not seem to interfere with enjoyment, as the human being is so framed as to bear his neighbor's afflictions with remarkable fortitude.

It is said that a white man may live comfortably in Rio for about three years, and then suddenly become a nervous wreck. It is easily imaginable that this should be true. It must be remembered that Rio is in the tropics.

As has already been mentioned, walking in the middle of the day, even in winter, is a labor, and this inertia seems due as much to the glare of the light as to the heat and moisture.

The question of the action of light on the white races in the tropics is an interesting one, and is rendered now more understandable through the work of Finsen and his followers. Light alone, through its actinic rays, even when deprived of its accompanying heat rays, can, as is well known, cause all degrees of inflammation of the skin. It may even kill or cause necrosis even of the deeper as well as of the more superficial tegumentary tissues, and there are more actinic rays in the sun's beams in the tropics than in the temperate zone, as shown by the quicker action of sunlight on sensitized paper in photography. The violet rays are at the actinic end of the spectrum, and often when looking at the beautiful violets and blues of Rio Bay I asked myself if it were solely the moist, hot atmosphere, with its abundance of light as such, or partly also through the dissociation of the rays of the spectrum, that made the climate so enervating.

The skin, by exposure to light, becomes more resistant to its influence. One of the chief changes increasing this resistance, is the formation of pigment that absorbs the light. That increased pigmentation or tanning of the skin does protect was first shown by Finsen, when he blackened part of the skin exposed to a strong light. The blackened portion did not become inflamed, while, on the contrary, the unblackened portion did (1). Not alone will light act detrimentally on the skin; it will also affect the blood. Finsen exposed the tail of a tadpole to a strong light, and found that the oval red blood corpuscles contracted and became rounder (2). It is also known that blood as well as pigment has the property of absorbing light, and so it comes about that when the skin is inflamed by exposure to a strong light the further progress of this inflammation is much retarded by the increased amount of blood sent to the inflamed part. From these facts showing the influence of light on the more stable tissues and on blood, and of the blood and of the pigment of the skin on light can be appreciated the profound interaction there is between light and the human body. In the color of his skin alone the coal black negro has a decided advantage over his

(1) Quoted by Heller.

(2) *Loc. cit.*, s. 55. *Vergleichende Pathologie*, s. 54.

white brother in resisting the detrimental influence of intense light. What his other capabilities may be in overcoming the hardships of a hot climate we do not yet fully know. It is known, however, that even when the skin of the white is deeply "tanned," it never attains that peculiar dense coal black of the negro, that approaches more nearly the color of the lampblack of Finsen's experiment than ever the white man's can. It is even thought that the brown pigment of the white man is not of the same nature as the black pigment of the negro. The negro is the product of ages of natural selection in the tropics. He resembles Patou, in Rostand's "Chanticleer," that was the total dog, the son of all those dogs that had passed before.

The salient features of Rio de Janeiro's population are the number of negroes and the mixture of blood between the Portuguese and the negro, which can be seen everywhere. Socially nowhere does there seem to be any color line. Of course, the color line alone would be a rather fine distinction in such a case, as the total quantity of pigment in a negro's skin measures only one gram (3) and the Portuguese themselves are very dark skinned and should measure up, as regards pigment, tolerably close to the African, as one can easily see on driving through the country districts of Portugal. Still there is a long distance between the Aryan, however dark, and the negro, and there are other differences both anatomical and mental between the races that are just as salient as that of color. The whites and the mulattoes of Rio are not a clear-complexioned, robust-looking people. And in fact many of the other large mammalia besides the white human being do not seem to flourish in this climate, which would also indicate that there are other factors besides pigment in the problem. For example, I saw no good horses excepting some saddle and carriage horses, that probably were imported and fed on imported hay. Some sheep I saw were an insult to the landscape, and in the English Club my attention at lunch was especially drawn to mutton chops on the bill of fare as being recently imported in cold storage from New Zealand, and therefore particularly good.

The bovine race, however, thrive, and the heavy drafting is done by them, and not by horses or mules. The native beef is very good. It has, however, a fleshy, flat, bloody flavor, because it has to be sold the day it is slaughtered. In a slaughter house I visited near Petropolis the beef and hog carcasses looked well. The reason for the superiority of the bovine race over the equine

(3) From quantitative estimations it has been calculated that the whole skin of an adult negro of average body surface contains only about 1 gram of melanin. (The Functions of the Skin, by M. S. Pembrey, M.D., the British Journal of Dermatology).

in the tropics lies probably in the cow's stomach being able to digest the coarse grasses. As for the pig, the omnivorous eater, wherever he can introduce his grunt and his snout he can pick up a living. Although these two domestic animals, the cow and the pig, grow to a good size, yet Darwin especially mentions the absence of large wild animals in Brazil. This is particularly noteworthy, as with a luxuriant vegetation a corresponding bulk in the animals consuming it is to be expected.

On a rainy day, although we did not feel the least chilly, a Portuguese who accompanied us put on an overcoat and Arctic overshoes. Pulmonary complaints seem also to be very common, and one of the largest advertisements on the street cars was on a big board running the length of the top, setting forth the curative properties of a certain brand of cod liver oil emulsion. Although the whites and mulattoes are not robust, the blacks are vigorous looking, and I have seen a negro mammy moving along with shoulders squared and an insolent gait that insulted the sidewalk at every step.

The care the whites evince not to expose themselves to the rays of the tropical sun, even in cool weather, has also a bearing on the question of the deleterious effect of light. On landing in a launch at Funchal, Madeira, I removed my hat because of the wind. My Brazilian fellow-passengers all warned me of the risk in exposing myself, bare-headed, to the sun.

The composition of the roofs in Rio, and in other hot countries, is also interesting in regard to the influence of light and heat on the human organism. In Rio the roofs are almost all of tile, and they look very beautiful with their graceful undulations and delicate red tints. Other roofs are of solid stone. They are like those of Palestine, perfectly flat, and surrounded by a breastwork.

In reflecting upon this question of roofing, the fact must be considered that no substance seems to be absolutely opaque to all the heat and light rays, but that some substances, such as lead, oppose a most decided obstacle to their passage. Roofs of tile or stone must be much more opaque than those of wood, or even those of corrugated iron, which, unfortunately, as far as beauty is concerned, are becoming so common. It would not be contrary to what we know of nature's laws, if man, although ignorant of the penetrating qualities of heat and light, had unconsciously chosen a very dense material as a roofing.

Formerly everything seemed especially arranged to make Rio a pest-hole. It had a land-locked harbor with abundance of moisture, and a hot sun beating down into it. The upper classes of its population were lazy and ignorant, and its lower

classes were composed of poor whites and recently emancipated slaves. It was an old Portuguese city with narrow streets, no sanitation worth mentioning, and enough mosquitoes of the right breed to infect with yellow fever a people reduced to the proper degree of receptivity by crowding, by climate, by miscegenation, and by poor food.

But Rio is clean! How was the marvel accomplished? It is due, like many a blessing, to misfortune. The misfortune was yellow fever, and the enlightenment consequent to scientific modern medicine furnished the means of combatting it. The change came with the advent of bacteriology and clearer views in regard to the causes of the acute infectious fevers. As a consequence of this clearness of view, more precise international quarantine laws were enacted, and under these the trade of Rio languished, and the peculiar bitterness of this lay in the fact that the ships that were avoiding Rio de Janeiro were passing on to their rapidly growing southern rival, Buenos Aires. Envy and loss of trade finally drove the authorities into action: two broad streets, the Avenida Central and the Cinco de Marzo, were opened up through the old crowded city; a beautiful sea wall and esplanade were built along the city front; the sewerage was so treated as not to foul the waters of the bay; and the markets were put in a sanitary condition. The meat shops are delightfully neat; and the market on the waterfront is a model of cleanness, lightness and airiness. A good corps of health inspectors make frequent house-to-house visits, and by the free use of creolin, and by prohibiting the accumulation of stagnant water in tubs or elsewhere, the mosquito pest is almost abolished. The water supply of Rio, drawn from the neighboring hills, is good. As a consequence of these sanitary measures there has been no yellow fever in this port for years, and there is very little typhoid fever.

The fear of death alone would never have brought about these beneficent results. The high death rate would have been patiently borne as it had been for ages, and would have been regarded as a visitation of Providence. The blessing was achieved through a love of gain, and a fear of loss, ably supported by the neighborly envy and hatred the Brazilian bears towards the Argentinian. By the help of these ignoble passions of avarice, fear, envy and hatred, results were obtained that wisdom, learning, charity, and all their cognate virtues could never have accomplished. These beneficent vices secured the appropriations for the work. The man who actually did the cleaning was Dr. Oswaldo Cruz. To this man and to modern medicine must be given the credit for the achievement.

Rio is now a city not dangerous to health. Infection is re-

duced to ordinary limits, and if a man has enough money to enable him to live high in the mountains, or out on the seashore, he may pass his nights in coolness and in quietude, even if his days are spent in an enervating atmosphere, where collars wilt and where it is impossible to keep dry mucilage on postage stamps.

In this way rapid and cheap locomotion, and the correct application of the teachings of sanitary medicine, are bringing about a wonderful change in the tropics, and rendering possible their conquest by the white man. The permanency of the conquest, however, depends on a continuous supply of recruits from the temperate zone, for it is like an army in a foreign country, once cut its communications and it quickly dwindles. On the vessel sailing from New York to Rio there were a number of men, fine, well-educated young fellows, clean-cut and healthy, who were on what appeared to me to be a fruitless search for fortune and happiness, as even if successful their home would be in a land with different ideals from ours and in an unsuitable climate. As the Spanish proverb runs, they won't have teeth to crack the nuts when they get them.

Nevertheless the conquest of the tropics by the white man has only begun, and what has already been done can only be appreciated by a visit to them.

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Selected Articles.

FUNCTIONAL DYSPEPSIA.

BY ALLAN B. FEARNLEY, M.B.

It is said of an eminent physician, now deceased, that his advice to his students on the subject of the use of drugs in dyspepsia was as follows: "Gentlemen, when you fail with your alkalies try with your acids," and thus sums up the attitude with which the general practitioner is only too prone to regard the treatment of this common complaint. Familiarity breeds contempt, and although it is admitted that a wide clinical experience is essential for the acquirement of an accurate knowledge of any disease, yet such a condition as dyspepsia, which every practitioner has ample opportunities for studying every day, and thereby building up a sound clinical experience, is neglected, and merely treated empirically—groping in the dark, instead of being conscientiously studied.

This attitude is probably accounted for by the confusion of thought which arises from the necessarily inadequate teaching devoted to the subject in hospitals, producing a feeling of despair of ever arriving at any accurate knowledge of the true causes of the complaint, and, therefore, of its successful diagnosis and treatment.

AN ATTEMPT AT CLASSIFICATION.

Yet in spite of the obvious difficulties of a diagnosis, which must to a large extent rest on subjective symptoms described with more or less inaccuracy by the patient, and despite the absence of practical and reliable clinical methods, it is nevertheless quite possible to form a perfectly definite and simple scheme of tabulation into which practically all cases of purely functional dyspepsia will fall. It must be clearly understood that such a scheme is only a "working plan," founded on general principles, not pretending to be scientifically accurate in the absence of scientifically accurate data—not dogmatic, but adjustable to each individual case.

To begin with, then, the old classifications which are still to be found, even in some recent text-books, are best forgotten—renal, flatulent, nervous, irritative, bilious, etc. For after excluding dyspepsias secondary to organic disease and to general

diseases such as phthisis, morbus cordis, cirrhosis, the gastric crises, etc., there are two types of functional dyspepsia, and only two—(a) the hypertonic type, characterized by an excessive secretion of hydrochloric acid and probably also in most cases an increase in motility, causing more or less cramp or spasm, and (b) the atonic type associated with a diminished acid secretion and certainly by a decrease in motility.

This classification will be found practically to cover all cases of purely functional dyspepsia. Every case should be approached on these lines and all questions asked and examinations conducted with the object of deciding to which of those two classes the case belongs.

On what, then, does the diagnosis rest? Firstly, there are two fairly definite types of patient corresponding to the two classes described.

The hypertonic is typically otherwise robust, with large appetite often athletic, a meat eater, and seldom an abstainer, what may be called the "positive" type, and, a most important point, with a high-tension slow pulse. Pain is his most pronounced symptom. Whereas the typical atonic is the "negative" type, flabby, tired, often anæmic, with nausea in place of appetite, and a low-tension pulse, complaining of discomfort and flatulence rather than pain. Both are almost invariably constipated.

With regard to symptoms, any dogmatic statement is dangerous, since in practice the two types merge into one, except in one respect, which, if it is marked, determines the diagnosis—namely, time of onset of the symptoms.

THE HYPERTONIC TYPE.

In the hypertonic dyspeptic, acid probably continues to be poured out after all the food has passed the pylorus, that is to say, the symptoms begin after digestion has ceased, some hours after food, and this also explains the fact that these cases are often relieved by taking food, so that the patient may ascribe all his symptoms to hunger.

There are two other symptoms which, when they appear, are characteristic of the hypertonic form—namely, heartburn and pyrosis—the gushing of alkaline fluid from the mouth being presumably an attempt of nature to deal with the trouble by the secretion of a super-alkaline saliva.

In the atonic form the lack of acid is probably always associated with decreased motility; the food remaining too long in the organ, becomes, as it were, a foreign body, and calls forth a

profuse mucous secretion from the stomach, which probably never becomes properly emptied and clean; therefore the symptoms appear as soon as the food enters the stomach and remain more or less intense until the time for the next meal.

Occasionally home remedies which the patient has tried may help in diagnosis. Partial relief obtained from bicarbonate of soda points to the hypertonic form; from acid fruits, such as oranges, to the atonic. Sometimes no definite diagnosis can be made till the effect of drugs has been tried. Under such circumstances it is always wise to treat all doubtful cases as atonic; since an error in this direction causes less discomfort to the patient than the exhibitions of acids would in the hypertonic form.

TREATMENT.

In the treatment of dyspepsia there are two indications common to both varieties—(a) attention to the teeth where necessary, and (b) correction of constipation. Apart from this the treatment of each variety is distinct.

General Treatment consists of rest in bed for a few days in aggravated cases, and, where possible, in freedom from mental worry, overwork (especially where associated with hurried mastication), and removal from uncongenial surroundings.

In the hypertonic form hot baths and Turkish baths do good in promoting excretion from the skin, since it is probable that the condition is associated with some kind of auto-intoxication by absorption from the intestine. Vigorous exercise is also indicated in these cases for the same reason.

In the atonic type, abdominal massage and graduated exercises, such as are used in ordinary chlorosis, are useful.

DIET.

In the causation of functional dyspepsia, diet probably has much less to do than would appear at first sight, with a few exceptions. For instance, it is probable that excessive meat-eating, especially when combined with a free consumption of alcohol, and when associated with lack of sufficient exercise, predisposes to the hypertonic form and to the high arterial tension associated with it, while common salt probably assists in the production of the acid in the gastric juice, and condiments—mustard, etc.—stimulate its excessive secretion. Therefore in the dietetic treatment of dyspepsia, where there is no actual gastritis present, the indications are few—limitation of meat and alcohol in hypertonic cases, with substitution of boiled meat for roast and exclusion

of salt and condiments, and in atonic cases a "dry" diet with exclusion of green vegetables, which aggravate flatulence and addition of alcohol daily to one of the meals. By a "dry" diet is meant avoidance of "slops," which again tend to increase flatulence, and the substitution of dried bread or hard dry toast for ordinary soft bread.

DRUGS.

The first indication is the treatment of the constipation, and for this the best aperient in all cases to begin with is calomel. In hypertonic cases associated with high-tension pulse, its use may be continued for a week in fractional doses (gr. 1-6-1-4) every night, assisted by dram doses of sodium sulphate in half a pint of water every morning. It is a detail of some importance to withhold natural mineral waters in these cases, inasmuch as they contain considerable quantities of sodium chloride, and are therefore indicated in the atonic form, though here calomel should not be continued, being replaced by some such drug as cascara.

Coming to drugs which are intended to act directly upon the stomach, the important point is that they must be administered after food; if they are to modify the course of digestion they must be given during digestion. Administration of alkalies before meals, with or without the bitter infusions, is good, but simply from the point of view of lavage; and is therefore equally good in either variety, and to be most effective must be given in half a pint of water.

INDICATIONS FOR ALKALIES.

In the hypertonic cases, then, the obvious cry is for alkalies, the best being sod. bicarb. and bismuth carbonate in combination, and given in large doses. Probably it is useless to give less than 20 gr. of the bismuth salt as a dose, or, if the fluid form is used, the B.P. liq. bismuth et ammon. cit.—using 2 drachms as a minimum dose—with either a sedative such as HCN may be combined. Bismuth is also administered in the form of lozenges given when the pain comes on. These probably act mechanically to a certain extent at least, causing an increased flow of alkaline saliva, since the amount of bismuth in them is too small to have much effect, and also the pain may be to some extent relieved by sucking any hard substance, such as a pebble. If there is any gouty tendency, guaiacol may be separately administered in cachets.

ACIDS.

In atonic cases the important drug is hydrochloric acid. It must be remembered in prescribing HCl that in many of these cases the gastric mucosa is in an irritable condition, and may therefore need the addition of morphia in the form of liq. morphine hydrochlor to enable it to stand the acid. The morphia salt should, of course, be withdrawn as soon as possible. The mixture may be made up with a bitter and a carminative, such as peppermint or ginger; sometimes pepsin may be added, though its advantages seem to be disputed.

AFTER-TREATMENT.

It must be remembered that when the acute stage has passed off the patient still has the tendency to relapse as soon as treatment is stopped, because the dyspepsia is merely the symptom of an underlying cause. Most cases of hypertonic dyspepsia are associated with a raised arterial tension tending to actual arteriosclerosis, and in these a partial vegetarian diet should be advised, with considerable restriction of alcohol, and in the more intractable cases a more or less prolonged course of iodides with potass. citrate and an occasional short course of fractional doses of calomel. In the atonic form the underlying cause is debility, usually associated with some such condition as convalescence from acute illness, prolonged mental worry, or overwork, and often with anæmia.

It will be found in actual practice that diagnosis and treatment are often not quite so straightforward and simple as they appear upon paper. It must be remembered that we are depending almost entirely upon subjective symptoms for diagnosis, and that patients are apt to exaggerate and make misleading statements. There are certainly some cases where no organic lesion can be discovered, and yet they cannot be made to fall under either of the classes described, as, for instance, the true neuralgia found that by approaching cases of functional dyspepsia on some such lines as those indicated there will be fewer disappointments of the stomach, known as gastralgia; but nevertheless it will be both for patient and doctor.—*The Hospital*.

Editorials

THE MEDICAL PROFESSION AND INSURANCE BILL

The Chancellor of the Exchequer, in referring to the benefits included in his bill, stated that the average rate which the doctor obtains from the Friendly Societies in Great Britain is 4 shillings per annum, such payment to include attendance and medicines. He estimates that 14,700,000 will be affected by the bill, that is, the whole industrial population of the country. He proposes to allot to his new insurance doctors the minimum of 6 shillings a year for each insured person instead of 4 shillings, the present rate. As he proposes when possible to divide the work of the doctor and chemist, we are not quite sure whether the minimum of 6 shillings a year will be given for attendance alone without drugs.

It will thus be seen that Mr. Lloyd George wishes the Government to recognize in its entirety the necessity for contract practice. It is well known that the profession as a whole is dissatisfied with the conditions of contract practice, which the British Medical Association characterizes as a mischievous and inefficient system. A committee was appointed by the British Medical Association in 1902, to prepare and issue a report on Contract Practice. Mr. Lloyd George has referred to that report somewhat frequently, but apparently has misunderstood the objects of the Association. The *British Medical Journal*, in commenting on the Bill, says: "The astounding blunder of the medical advisers of the Chancellor of the Exchequer has been to lead the

people to suppose that the conditions set forth in a document intended as a first step towards the reform of a system condemned by the profession were such as the profession would be willing to see perpetrated and accepted."

In this matter Mr. Lloyd George was not advised by the leaders of the profession, either those who lead the British Medical Association or those who lead the colleges of the three kingdoms. They were not consulted. We are driven to the conclusion that he was advised by the prominent medical officials of other departments of the Government, for the Treasury has no medical department. If this surmise be correct, it gives us some foretaste of the kind of future that would be in store for the profession if it were handed over to the control of a medical bureaucracy.

THE STATE INSURANCE BILL OF GREAT BRITAIN

The new National Insurance Bill which has been introduced into the British Parliament by Mr. Lloyd George has been much commented on in both the lay and the medical press. The legislation is intended to affect all wage earning men, women and young persons, whose earnings amount to less than \$15.00 a week. The object is to provide a fund for the purpose of assisting these wage earners during sickness and old age.

The scheme as a whole is compulsory, and working people, employers and the state will all contribute in their separate proportions. The workman will contribute four pence per week, the workwoman three pence, the employer for each employee three

pence, and the state two pence a week for each working person.

In return for these contributions the bill offers:

- (1) Free medical relief with no taint of charity. The medical men attached to the friendly charities are to be better paid, and wherever possible the chemist will do the dispensing and the doctor will only prescribe.
- (2) The benefit of 30 shillings in maternity cases, with the proviso that women are not to return to work for four weeks.
- (3) Special help in cases of tuberculosis.
- (4) Sick allowance of 10 shillings a week for three months, and a permanent disablement allowance of 5 shillings a week to age of 70 years, when the patient will be transferred to the old age pension fund.
- (5) Women to receive 7 shillings and 6 pence for the first three months and thereafter on the same scale as men.
- (6) Young persons under 16 years will not receive sick pay allowance, but will receive medical treatment and the use of Sanatoria.

THE MUZZLING OF DOGS

There is both in the United States and Canada a general prejudice against the muzzle for dogs. The *New York Medical Journal*, in discussing the question, refers to an account in the daily press (*The New York Times*) of a girl of seventeen years of age, who was attacked and seriously bitten by four fierce dogs. The writer says this introduces the yearly-recurring question, "What shall be done with the dog? How

shall we enjoy his friendship without danger from his savage impulses?"

This question has long been settled in Europe, where the dogs are consistently muzzled. As a consequence, such shocking attacks as that referred to are unknown in any cities of Germany, Austria, Belgium or France.

What are our objections to the muzzle? Among them, that they are uncomfortable for the dog and tend to make him ill-tempered. The *Journal* tells us, however, that this is not true, as anyone who has noted "the happiness, dignity and polished reserve of dog intercourse" in a European city can testify.

While we may admit certain discomforts for the dog and inconveniences for the owner, we must recognize that there is another side to the question. The advantages in favor of the muzzle may be mentioned as follows: The dog cannot eat garbage and various other filthy things which he may find outdoors, therefore the wearing of the muzzle prevents him from various forms of indigestion, which frequently result in fits. The *Journal* goes on to tell us that the muzzled dog cannot eat poisoned food deposited by his enemies out of doors. He cannot injure other animals. He cannot injure defenceless human beings, and, last of all, the muzzle prevents the dangers of rabies.

THE OLD APPRENTICE SYSTEM

The Apprentice System for medical students is now simply a matter of history, so far as the present generation of physicians is concerned. In these modern days we can scarcely realize how far we have

traveled from the older system of teaching. Many references have been made to the apprentice system during the last twenty-five years, and many have expressed the opinion that its revival would be beneficial at the present time. The great majority, however, think that any such revival under existing circumstances would be impossible.

While such appears the general opinion in Great Britain and North America, we hear with surprise that many French physicians seriously advise the readoption of the old system. The system of competitive examinations for medical appointments has been denounced. It is said that such examinations make the French aspirant for hospital and college positions a mere cramming machine, and that his whole student life has become one long series of cramming bouts between the examinations. It is stated that important changes in regard to such examinations have been already adopted, and others are in process of adoption.

La Tribune Medicale, in commenting on the subject, says: "The question of more practical education, and more opportunity for clinical experiences, have also been raised. One of the proposals in connection therewith is the revival of the old perceptor system." The writer, however, concludes his remark by saying: "We have so few really family doctors that the perceptor system could not, we fear, be carried out, but in its place we should aim at a compulsory year of hospital service."

MEDICAL ITEMS

The Annual Meeting of the British Medical Association for the year 1911 was held in Birmingham, July 24-29. We shall look forward with interest to the report of the Association in regard to the proposed National Insurance Bill. As indicated in this issue, the Association is almost unanimous in its disapproval of some of the features of the Bill.

THE CANADIAN MEDICAL ASSOCIATION

The forty-fourth annual meeting of the Canadian Medical Association was held in Montreal on June 7th, 8th and 9th, 1911.

There was no dearth of entertainment, but it was kept in due subordination to the main purpose of the meeting. No one could regret that the traditional "banquet" was not revived. A mass meeting is scarcely the occasion when a man may eat with comfort, drink with advantage, or talk with pleasure and profit. The business was transacted promptly and little time was spent in futile discussion. Indeed, the ground had been prepared so carefully that little was left for the members except to assent to what had been done.

The scientific work was of a very high order in respect of the papers which were presented and of the discussion which they aroused, and they were presented by men who were well qualified to speak for the profession. There were singularly few absentees, and that class of members has been eliminated who are content to have their names upon the programme without much thought as to the obligation which thereby devolves upon them. Sir James Barr fulfilled his undertaking to be present, and his address was listened to with much interest; but two other eminent men, namely, W. J. Mayo and Howard A. Kelly, were unable to attend. Naturally there was disappointment in the minds of many members, which should suggest to the executive in future the wisdom of putting forward no attractions which do not possess a reasonable certainty of being exercised.

The choice of Edmonton and Calgary as the next place of meeting was unanimous, and within the area of the district in which those cities lie no better selection than Dr. Mackid, as President, could have been made. Dr. H. G. Mackid is fifty-four years of age, and has been for many years one of the leading surgeons of Alberta. He is chief surgeon of the western division of the Canadian Pacific Railway Company, and president of the Alberta Medical Association. He graduated in the year 1879 from the University of Toronto. He was a student of the late Dr. James Stewart during his residence in the County of Huron, and he was assistant to him for several years. Dr. Mackid has

made numerous trips abroad, and has studied in Edinburgh, London, Vienna, and Berlin. He has been a constant attendant at the meetings of the Canadian Medical Association, and of the western associations, and has done much for the advancement of the interests of the Association throughout the entire West. There are many reasons why Alberta should have been chosen. It will be good for the Association to come in contact with the growing life of the West, and it will be good for the West to obtain the authority of organized medical opinion upon the various problems that invariably face a community which is in an early stage of existence.

At the opening session, Dr. George E. Wilson, Toronto, read an important and excellent paper on "Injuries to the Cord Without Damage to the Spine." The cases on which the paper was based had been accurately observed and most carefully recorded, and went to establish the fact that minute hæmorrhages into the substance of the cord were a frequent result of injury, but very often escaped recognition.

It was interesting to hear of the original research, and especially of the experimental work on the thyroid gland in monkeys, which was being carried out so extensively in Winnipeg by Drs. Halpenny and Gunn. Dr. McKechnie, Vancouver, in a paper on Henoch's purpura, stated that he had met with five cases of this somewhat rare affection within a comparatively short period. Dr. James Taft Pileher, Brooklyn, in a paper on the "Diagnosis and Surgical Indications of Duodenal Ulcer," dealt in a masterly manner with a very important subject. The frequency of the affection was emphasized, Dr. Pileher stating that it was probably as common as catarrhal appendicitis, but that up to the present time only the very chronic cases, those lasting from thirteen to twenty years, had found their way to, and come under the care of, the surgeon for operative treatment. The paper will prove to be a valuable contribution to the literature of the subject.

A paper on "A Safe and Rapid Method of Intestinal Anastomosis" was read by Dr. A. L. Soresi, New York.

Preventive Medicine.—The papers and the discussions upon them were of a very good order, and it would be invidious to single any out for distinction. The chief topics dealt with were the milk question, railway sanitation, military hygiene, prevention of venereal diseases, and typhoid and typhoid-like infections, particularly in their relation to water supplies. This last subject was treated at a combined meeting of the sections of

preventive medicine, medicine, and laboratory workers. The combined meeting resulted in establishing the importance of placing the typhoid-like infections upon precisely the same plane as true typhoid fever, as regards their infectiousness, treatment, and preventive measures. The incidence of their infections was also proved to be great, more so than was to be expected from hospital statistics, and it was admitted that water was the common channel of transmission.

The actual finding of the paratyphoid organism in water supplies, causing some of the epidemics dwelt upon in the Section, was a notable feature in the contributions. In this respect the outbreak at St. John's, Newfoundland, due to the water supply being infected with paratyphoid organisms is remarkable in the fact that practically no cases of true typhoid were recorded, all being paratyphoids, furnishing the typical, clinical picture of true typhoid at the commencement, but terminating rather abruptly about the seventeenth or nineteenth day. It was, therefore, agreed by those present at the meeting that the attention of the medical profession be drawn to the necessity of recognizing this prevalent class of disease called paratyphoid, mild typhoid, or intestinal grippe: that the same stringent precautionary measures be adopted as in the handling of true typhoid; and, lastly, it was proposed and carried by the meeting that it would be advisable to do away with any distinctions drawn between true typhoid and typhoid-like infections, classifying all these diseases under the one term, "enteric fever," abolishing altogether the word typhoid.

Obstetrics and Gynecology.—The first session opened with a paper by Dr. Goodall, of Montreal, on chronic metritis and uncontrollable hæmorrhage. This was followed by a talk on the menstrual flow, by Dr. J. G. Clarke, of Philadelphia. His remarks were illustrated by a number of beautiful lantern slides. The structure and blood supply of the ovary and uterus, and the mechanism of menstruation and ovulation, were demonstrated in a graphic manner, and explained with admirable clearness. Next came the symposium on uterine displacements: the ætiology and pathology were given by Dr. Cleland, of Toronto, the symptoms and complications by Dr. Chipman, and the treatment by Dr. Lockhart, of Montreal. A lively discussion followed as to whether or not retrodeviation of the uterus is to be considered as pathological, and whether of itself it gives rise to symptoms and calls for treatment. Most of those who spoke favored the view that in retrodeviation with symptoms requir-

ing treatment, there is always prolapsus, and that it is the prolapse which is important rather than the retrodeviation. The relative merits of the various operative procedures were discussed, especially ventrofixation and ventrosuspension. The majority of those present were in favor of suspension.

The second session was opened with an abstract of Dr. Vineberg's paper on hydatid mole, followed by Dr. Gardner, of Montreal, on common mistakes in gynaecological diagnosis. This latter paper was much appreciated, and called forth a spirited discussion, with a general relating of personal experiences. Dr. Lockhart showed two rare and interesting specimens illustrating his case report of tuberculosis of the urethra. Dr. Hay, of Toronto, read a careful paper on practical points in pelvic and abdominal diagnosis, and Dr. Fraser, of St. John's, Nfld., dealt with acute toxæmia in pregnancy and the puerperium.

The third session was opened with an abstract of Dr. Kelly's paper on gradual dilatation of the uretero-vesical orifice and the ureter above it. Then came a paper by Dr. Reddy, of Montreal, on eclampsia, the discussion upon which divided itself into treatment in hospital and treatment at home by the general practitioner. A symposium on temperature in the puerperium followed; the ætiology was given by Dr. Little, the diagnosis by Dr. René de Cotret, and in the absence of Dr. McIlwraith, of Toronto, the treatment by Dr. Reddy, of Montreal.

Laboratory Workers.—The somewhat recent establishment of the Section for Laboratory Workers was fully justified. The attendance this year was as select as the papers presented to it were excellent. Special note must be made of Dr. Meakins' communication on "Immunity in the Rabbit Against Tuberculosis," the degree of immunity being gauged by the opsonic index, not according to Wright's method, but according to that of Neufeld and Klien, which, in Dr. Meakins' hands, has already been demonstrated to give far clearer results. Perhaps the most interesting point in this communication was the demonstration of the fact that, while dead bacillary emulsion given periodically leads to a progressive rise in the opsonic index, old tuberculin is absolutely without effect. Dr. Meakins did not in the least pretend that the opsonic index affords a full indication of the resisting power of the individual, or that old tuberculin has no effect upon tuberculous lesions. It is, however, significant that animals treated by the bacillary emulsion withstood later inoculations with the virulent tubercle bacilli, whereas those similarly treated with old tuberculin did not.

Demonstrations were afforded by Dr. Rhea, of the Montreal General Hospital, on the application and use of differential stains whereby to distinguish certain tumors of non-striated muscle and of glial origin from sarcomas originating from the tissue. These methods demonstrate positively that both plain muscle tissue and the neuroglia can give origin to tumors which histologically are of the sarcomatous type. He also demonstrated before Dr. Baird an excellent method for the rapid fixation of frozen sections. Dr. F. T. Tooke, of Montreal, gave an admirable lantern demonstration of a series of sections from cases of glaucoma, showing both the changes occurring in the filtration angle and the cupping of the optic disc.—Abstract from editorial *Can. Med. Assoc. Jour.*

LIST OF THOSE WHO SUCCEEDED IN MEDICAL COUNCIL FINAL AND INTERMEDIATE EXAMINATION

The following candidates have passed the Medical Council final examination:

Final—Frederick Adams, Cobocok; Edward B. Alport, Orillia; Walter Clifford Arnold, Zephyr; Duncan Allison, Belgrave.

Edgar Sherrell Bissell, Row's Corners; Frederick Boyd, Kingston; Francis Arthur Brewster, Beeton; Frederick Herbert Buck, Norwood; George Edward Butterwick, Aylmer; Robert W. Breuls, Toronto; James Campbell Byers, Eganville.

John George Alexander Campbell, Toronto; Roscoe Campbell, Gravenhurst; Clarence Moffatt Crawford, Kingston; William Wilson Cruise, Port Dover; Harry William Chamberlain, Aylmer West; Paul O. Colombe, Montreal, Que.

William Frederick Dey, Simeoe; Ivan W. Dickson, Toronto; Ulysses Joseph Durocher, Ojibwa.

Frederick Etherington, Kingston; Herbert Henry Eyres, Lindsay.

Matthew Norman Faris, Bradford; Rosslyn Montague Ferguson, Smith's Falls; Gerald J. Foster, Toronto.

Percy Newby Gardner, Toronto; William Geiger, Henall; George J. Gillam, Woodstock; Andrew Taylor Gillespie, Galt; Roscoe Reid Graham, Lobo; John Nelles McKim Gardiner, Kingston; George Anthony Joseph Glionna, Toronto.

Walter Lett Hackett, Belfast; Geo. Harold Ross, Hamilton,

Guelph; Gordon McClelland Hanna, Brantford; Thomas Richard Hanley, Midland; Frederick Samuel Harper, Hamilton; Howard D. Harrison, Toronto; Francis Rudd Harvey, Arthur; Shirley Morell Holmes, Chatham; Elijah Maitland Horton, Roblin; Edward Walton Huxtable, Sunderland.

Hewey Lee Jackes, Toronto; Ross Alexander Jamieson, Mount Forest; Robert Edmund Johnston, Toronto; Gordon Leigh Jepson, London; Herbert Jones, Toronto; David Bradshaw Jamieson, Durham.

Alexander Douglas Wallace Kay, Windsor; Perry Orr King, St. Thomas.

Allan Victor Laing, Dundas; Robert Tarswell Lane, Sault Ste. Marie; Alexander Smirle Lawson, Guelph; Arthur Baker LeMeseuer, Toronto; Harry Drummond Livingstone, Listowel; Garretson Linscott, Brantford; Andrew Lowrie, Tillsonburg; John Milton Livingstone, Baden.

John Burritt Mann, Bridgenorth; R. Russell Montgomery, Wroxeter; Robert Lindsay Morrison, Toronto; Neil Alexander Morrison, Elmvale; Arthur Irvine McCalla, St. Catharines; Ray Vance McCarley, Brockville; William Langton McCullough, Port Arthur; William Henry McFarlane, London; Robert Alexander McKay, Ingersoll; Kenneth Arthur McLaren, Ottawa; Sarah Georgina McVean, Dresden; John Duncan McPhee, Breechin; Samuel McMurrich McLay, Woodstock; Charles James McPherson, Metcalfe; Herbert Bayne Moffatt, Ottawa.

Archibald Enos Naylor, Essex; William Freeman Nicholson, Dundas; Otto Wilmot Niemeier, West Toronto.

Alfred Pain, Hamilton; Frank Stewart Park, Toronto; James Paterson Paton, Merritton; Claude Allison Patterson, Forest; Frank Ernest Pettman, Southend; John Leo Poirier, St. Catharines; George Wesley Pringle, Madoc.

George Alexander Ramsay, West London; Elmer Freeman Richardson, Aurora.

Harry James Shields, Toronto; Harry Gray Smith, Port Dover; Leslie Ord Campbell Skeeles, Toronto; William Oliver Stevenson, Hamilton; Samuel J. Streight, Oxford Mills.

Franklin John Thompson, Lucknow; William Clair Toll, Carbon, Alta.; Emerson James Trow, Stratford; Harry Alfred Turofsky, Toronto.

Edward Gladstone Vernon, St. Mary's.

Guy Halifax Wallace, Toronto; Thomas Moffatt Weir, Rayside; John Cameron Wilson, London; Charles Stewart Wright, Campbellford.

INTERMEDIATE.

The following candidates have passed the intermediate examination of the Medical Council:

Duncan Allison, Belgrave; Charles Cleland Alexander, Seaforth.

Harry Wordsworth Benson, Ross Mount; Edgar Sherell Bissell, Row's Corners; William Oscar Bonser, Toronto; Frederick Boyd, Kingston; Robert W. Breuls, Toronto; James Campbell Byers, Eganville.

John George Alexander Campbell, W. Toronto; Roscoe Campbell, Gravenhurst; Wm. Richard Cann, Oshawa; Harry William Chamberlain, Aylmer West; Neil Alexander Christie, Stayner; Paul O. Coulombe, Montreal, Que.; Clarence Moffatt Crawford, Kingston; Wm. Wilson Cruise, Port Dover.

Robert Davies Defries, Toronto; Roy Gladstone Douglas, Meaford; Ulysses Joseph Durocher, Ojibwa.

Allan Sloane Eagles, Meaford; Herbert Henry Eyres, Lindsay; Frederick Etherington, Kingston.

Rosslyn Montague Fergusson, Smith's Falls; William Ewart Ferguson, Toronto; David Joseph Norman Ferrier, Belwood; Gerald J. Foster, Toronto.

John Nelles McKim Gardiner, Kingston; George J. Gillam, Woodstock; George Anthony Joseph Glionna, Toronto; Raymond M. Gorssline, Bloomfield; Lawrence Oswald Griffin, Toronto; Percy Newby Gardner, Toronto.

George Harold Ross Hamilton, Guelph; Gordon McClelland Hanna, Brantford; Thomas Richard Hanley, Midland; Alfred Purvis Hart, Wilfrid; Horace Hanley Harvie, Coldwater.

Cyril Gray Imrie, Whitehall, Mich.

David Bradshaw Jamieson, Durham; Ross Alexander Jamieson, Mount Forest; Robert Edmund Johnston, Toronto; Lloyd Arnold Jones, Glanford.

Alexander Douglas Wallace Kay, Windsor; Percy Orr King, St. Thomas.

Allan Victor Laint, Dundas; Garretson Linscott, Brantford; John Milton Livingstone, Baden.

Ewen Archibald Mackenzie, Toronto; Arthur Irvine McCall, St. Catharines; Ray Vance McCarley, Brockville; Elmer Walker Mitchell, Sandhill; Herbert Bayne Moffatt, Ottawa; Neil Alexander Morrison, Elmvale; Robert Walker Munro, Uxbridge; Charles J. McCabe, Hamilton; William Langton McCullough, Port Arthur; Edwin Henry McGavin, Seaforth; John Duncan McPhee, Brechin; Samuel McMurrich McLay, Woodstock;

Archibald H. McMurehy, North Bay; Charles James McPherson, Metcalfe; George Alexander McQuibban, Harriston; Sarah Georgina McVean, Dresden.

William Freeman Nicholson, Dundas.

Frank Stewart Park, Toronto; James Patterson Patton, Mer-ritton; Claude Alliston Patterson, Forest; Frank Ernest Pettman, Southend; John Thomas Phair, Toronto; George Wesley Pringle, Madoc.

George Alexander Ramsay, West London; Joseph Mastai Ravary, St. Amour P. O.; Elmer Freeman Richardson, Aurora; Harry Lee Rountree, Weston.

Harry James Shields, Toronto; Ross Lester Shields, Toronto; Charles Wilfred Sinclair, Aylmer; Harry Gray Smith, Port Dover; Gordon Berkley Stalker, Walkerton; Leslie Ord Campbell Skeeles, Toronto.

Emerson James Trow, Stratford; Harry Alfred Turofsky, Toronto.

Amherst Hastie Veitch, Port Elgin.

Guy Halifax Wallace, Toronto; Warren Edward Wilkins, Verona; John Cameron Wilson, London.

THE CASE OF MICHAEL FRASER

The petitioner in this case applied to the Courts to have it declared that Michael Fraser is a person of unsound mind, and as a consequence unfit to conduct his affairs.

By an order dated January, 1910, the Hon. Justice Britton was asked to determine the matter. As the evidence for and against the question of the man's insanity was very conflicting and unsatisfactory, and as he was unable to appear in court during the trial, the learned Judge visited Fraser at his home in Midland, and carried on a friendly conversation for some time. After the trial was concluded judgment was given to the effect that Fraser, although simple minded, was sound and fit to conduct or direct his affairs. The petitioner appealed, and there was a new trial by the Judges of the Divisional Court.

The main facts are as follows: Michael Fraser, an old man aged 82 years, and supposed to be worth from \$80,000 to \$90,000, was married to a young woman named Miss Robertson, January 13th, 1911. Shortly after the marriage the husband transferred to his wife a large portion of his property; on March 10th he made a will whereby he gave his whole estate to his wife.

We publish in this issue a goodly portion of the judgments of the three Judges, Chief Justice Sir Wm. Mulock, Chief Justice Teetzel and Mr. Justice Middleton. As we are told there will be another appeal, we presume the matter is still *sub-judice*, and we are therefore not now at liberty to make any comments on the merits of the case.

THE CASE OF MICHAEL FRASER.

We have extracted from the judgments of the three Judges of the Divisional Court the portions which are of special interest from a medico-legal point of view.

Chief Justice Sir William Mulock in his judgment says:

"In this matter the petitioner seeks to have it declared that Michael Fraser is a person of unsound mind and incapable of managing himself or his affairs, and by order dated 23rd of July, 1910, it was referred to Britton, J., to try and determine whether Michael Fraser was at the time of the inquiry of 'unsound mind and incapable of managing himself or his affairs,' and this appeal is from Judge Britton's decision.

"Michael Fraser, a man of some 82 years of age, was possessed of property estimated to be worth between eighty and ninety thousand dollars, some forty-six thousand of which he acquired by will from his brother John, who died in the month of August, 1909. John's estate is still unadministered, being in the hands of the executors, namely, the said Michael Fraser and one Irwin.

"On the 13th of January, 1910, Fraser went through the form of marriage with one Margaret Robertson, and shortly thereafter transferred to her all his moneys, securities for money and real estate except such as came to him under his brother's will.

"An examination of the evidence at the trial failed to furnish to the court any detailed information regarding such alienation of property or the circumstances attending the same, or regarding the management of the trust estate of John Fraser, and such information appearing to us to be material we directed the taking of further evidence.

"The additional evidence taken in this case discloses facts beyond dispute as to Fraser's dealings with his property, a knowledge of which by the court is, in my opinion, essential in order to a right conclusion being reached.

"If Fraser is of unsound mind it is to his interest that that fact be so found, and he should not be prejudiced because of the

petitioner having omitted to put the Trial Judge in possession of all material evidence. Having regard to the object of this inquiry I am unable to discover any good reason why the court should not at this stage exercise its discretionary power as to receiving new evidence in regard to incontrovertible facts showing Fraser's conduct touching his affairs or his capacity to manage his property.

"It is the duty of the court to throw its protection over the persons and property of those of unsound mind, and to that end in such cases the rule giving discretionary power to an appellate court to admit further evidence should, in my opinion, be liberally interpreted. For these reasons I think it was the duty of the court to learn, if possible, how in fact Fraser had been managing his property. Such evidence is most helpful in determining the question in issue.

"The evidence showed that between the date of the marriage on the 13th of January, 1910, and July, 1910, Mrs. Fraser had succeeded in obtaining transfers to herself for her own benefit from Michael Fraser of all his moneys, securities for moneys and lands and real estate, except his interest in the estate of his brother John."

Speaking of the examination of Fraser by the three at Midland, he says:

"He impressed me as perfectly truthful and honest. Before the impairment of his faculties he had evidently been a man of more than ordinary ability, who had read a good deal.

"From his examination the following facts appear:

"With reference to the deed of his residence to his wife, Margaret Fraser, he has no knowledge of its existence, and is firmly of opinion that he still owns the property. His attitude to her in connection with the property is that he never intended to give it to her in his lifetime, but would probably do so by will.

"As to the gifts of money to his wife his mind is a complete blank. He was aware that at one time he had ten or twelve thousand dollars in certain banks in Midland, and thinks the money is still there, and is wholly unaware of having given it to his wife. In ignorance of its withdrawal in favor of Mrs. Fraser, he has offered her small sums from time to time, and he seemed touched by her disinterestedness in not accepting them."

"As to the cheque for \$2,536.45 given to his wife Fraser has no recollection whatever of the transaction.

"Before the death of his brother John, Fraser made a will. Then he made another will after John's death, and then in

March, 1910, he made another, whereby he gave his whole estate to his wife, but he has no recollection of any of these transactions, and is firmly of opinion that at no time in his life has he ever made a will.

"As to the value of John's estate, worth some \$46,000, the whole of which goes to Michael, the clearest idea he has of it is that it is worth 'ten or fifteen thousand dollars for all I know.'

"Such indifference in regard to a matter of such great pecuniary importance indicates that, left unprotected, he might readily fall a prey to any designing person who might fraudulently seek to strip him of his property.

FORGOT ABOUT THE CONSTABLES.

It was shown at the trial that on the 28th September, 1909, Michael Fraser signed a paper directed to his co-executor, Robert Irwin, to take such steps by the employment of constables or otherwise as might be necessary to protect his house and grounds from trespass by one Robertson or others. When shown this paper, which is signed by him, he failed to recognize it or remember any of the attendant circumstances. The evidence at the trial shows that the attempts of the Robertsons to obtain access to Fraser and of Miss Robertson to marry him, had been the subject of consideration by Fraser, Mr. Finlayson, his solicitor, and of others of Fraser's acquaintances. It was not a trifling matter of mere momentary importance, but one which seriously concerned Fraser, and if at the time of this occurrence Fraser was and thereafter continued in the enjoyment of his reason, it was, I think, impossible for him to have forgotten his uneasiness as to his overtures to Miss Robertson, his wish to be extricated from the legal consequences therefrom, and his desire to prevent the Robertsons having access to his premises, yet the various incidents have passed away from his mind. Evidently at the time of their occurrence his mind was incapable of receiving and returning impressions of matters of such great concerns to himself."

"The evidence in this case assumed a wide range," continues the judge, "and much of it deals with the circumstances connected with Fraser's marriage, but the validity of that marriage is not in question here and that class of evidence is material only in so far as it bears upon the question now under judicial investigation, namely, whether Michael Fraser was of unsound mind and incapable of managing himself and his affairs.

"The question is one of fact. Fraser may have been com-

petent to marry and not competent to manage himself and his affairs."

"I do not agree with the contention that in this matter there is an entire absence of delusions, nor with the broad proposition that the existence of delusions establishes in all cases insanity with the legal consequence of irresponsibility for acts.

"But unsoundness of mind may arise from many other causes than mere delusions, for example, by reason of want of intelligence because of mental decay, which is in fact this case, although Fraser is also the subject of delusions. He is under the delusion that his wife is without means, and so he offers her trifling sums. He thinks he still owns the moneys which he once had in the banks and that they are still there, also that he is still the owner of the house in which he resides and also his homestead farm, and he imagines that the object of these proceedings is to 'pluck' him.

"Medical experts testified to Fraser's capacity to manage his affairs, but they do not appear to have had the data necessary in order to enable them to form a sound opinion.

"A man may be able to do rationally a great many things, and at the same time be incapable of sane actions in regard to others. He may be competent to marry, but incompetent to manage business affairs. He may be competent to make a simple will, but incompetent to make a more complicated one.

"An intelligent explanation by Fraser of matters connected with the life history of himself and other members of his family, the manifestation by him in conversation of some more or less familiarity with literature, history and public matters, are not evidence as to his mental capacity to manage his affairs.

MEDICAL EXPERTS NOT CONVINCING.

"None of the medical experts who testified as to Fraser's sanity know how he had in fact dealt with any of his affairs since John's death, and therefore their evidence as to his capacity to properly look after himself and his affairs is to me unconvincing.

"Mr. Irving Cameron thought it strong evidence of Fraser's sanity that he knew the derivation of the word Plantagenet. To me that circumstance seems to prove merely that Fraser's recollection of past events is not wholly gone. Memory alone is not synonymous with soundness of mind.

"If these experts had been advised as to Fraser's actual doings in regard to his affairs, it is, I think, fair to them to assume that they would not have reached the conclusion arrived at in the absence of such material information.

"He never intended to give to his wife all his own cash in the banks, his residence, his farm property, or his municipal debentures, yet she succeeded in obtaining a transfer to herself of all of these moneys, lands and debentures.

"He never decided to actually make a will in his wife's favor, but it is in evidence that he has executed such a will.

"For some reason he avoids giving attention to his affairs, and his mind is a complete blank as to the numerous transactions that have occurred since August, 1909.

FORGOT HIS PROPOSAL.

"He has wholly forgotten the attempts of the Robertsons to obtain access to him, also his alleged proposal at that time to Miss Robertson, and his consultation with his solicitor, Mr. Finlayson, as to resisting further attempts.

"No rational person would, I think, conduct his affairs as Fraser has done."

"The inference which I draw from the evidence is that in August, 1909, Fraser was suffering from senile deterioration, and that he was then and has ever since continued to be and now is of unsound mind and incapable of managing himself or his affairs, and a committee of his person and estate should be appointed.

"As regards possessing will power to resist his wife's mercenary and covetous conduct, he is mere clay in the potter's hand.

"Her marriage with Fraser was simply a device on her part to acquire his property, and for no other purpose. Within a couple of hours after the marriage she commenced her efforts to that end, and unless protected by the court there is, in my opinion, no doubt that she will at the earliest moment obtain a transfer from Fraser of his interest in John's estate, being his only remaining property, the nature and extent of which he is incapable of understanding.

"Then, having stripped him of everything, Fraser will be entirely at her mercy, and if she chooses to desert him he will be a pauper, dependent on charity for the necessities of life.

"For the time being she might be appointed committee of his person, but the Toronto General Trust Corporation should be appointed committee of the estate, and should institute proceedings to recover all properties of which Mrs. Fraser may have fraudulently possessed herself.

"The costs of the matter, including costs of the appeal, to be paid out of the estate."

MR. JUSTICE TEETZEL.

I agree that the proper conclusion upon all the evidence is that Michael Fraser at the beginning of the proceedings herein and at the present time, although not a lunatic in the popular acceptation of that term, was and is a person of unsound mind and incapable of managing himself or his affairs, within the meaning of the Lunacy Act; and that the Toronto General Trusts Company should be appointed committee of his estate, and that Margaret Fraser should, until further order, be appointed committee of his person.

MR. JUSTICE MIDDLETON.

Upon the appeal coming before us we thought that at the hearing the real issue before the court had not been sufficiently kept in mind, and that evidence essential to the determination of the sole question before the court: "Is Michael Fraser of unsound mind and incapable of managing himself or his affairs?" had not been given.

"The defence, apart from 'experts,' called a number of medical men who examined Fraser who were not to give any opinion, but state facts only. This evidence is not of much value, and the attempt to evade the statute by asking a medical man as a fact and not as a matter of opinion the mental condition of the patient is not to be encouraged.

"The facts leading up to the marriage as detailed in the evidence before us are as follows:

"Miss Robertson from this time on appears to have conducted the courtship with some energy, as she visited the apparently moribund old gentleman at his residence several times, and at a date which she fixes as ten days before the 30th of September he had proposed marriage to her and she had accepted him. She also states that some three or four days before this he had told her that he intended proposing marriage, and asked her to consider the suggestion. This would leave about a week for the whole period of courtship.

"In the meantime the attentions of Miss Robertson were creating considerable anxiety in the minds of those having more immediate care of the old gentleman. These were Finlayson, his solicitor; Dr. McGill, his medical attendant, and Irwin, an intimate friend and adviser, and co-executor with Michael of John's estate.

"Fraser had developed what is called by one of the medical men 'an indication of senile deterioration, the sexual perversion of senility,' and was, consequently, ready to propose marriage

to any woman upon the least provocation or even without provocation. He had by no means lost all his intelligence, and when the woman was absent he repented him of his rashness. He feared that he had gone too far with Miss Robertson, and that he might have rendered himself liable to an action for breach of promise. The persistency of her attentions appears to have alarmed him, and he consulted his solicitor. The solicitor told him he need not worry; that no jury would award damages, and he could rest easy."

"Upon the medical evidence we were afforded very little assistance because the medical men did not know the facts which it appears to us to be important to have in mind when endeavoring to ascertain the capacity to deal with property."

Speaking of the visit to Midland:

"The old gentleman is by no means devoid of intelligence. His recollection of remote events is good, but he seems through the progress of natural decay to have entirely lost all ability to deal with his property."

"What then of the medical evidence? I have found it of very little value because the medical men have quite failed to approach the inquiry from the proper standpoint. In the early part of this judgment I have endeavored to show that this inquiry is solely as to the 'ability to care for himself and his property.' This can best be gauged by ascertaining whether the things actually done are in accordance with the real intentions of the man, and whether the things done are in themselves reasonable. None of the doctors adopted this course. Nor did any of them attempt to ascertain whether any of the facts stated by Fraser were accurately stated. This may be illustrated by the statement given to Dr. Caven as to his marriage: 'I saw the little girl, loved her, proposed to her, she accepted, and there is the whole thing. I saw her just eight or ten days previous to the marriage on January 13th, 1910. I believe I saw her in the summer, but cannot call it to mind.' If this account of the marriage had been true, one would certainly not find in it anything upon which insanity could be suspected, but the trouble is that the statement is so widely different from the truth.

"More pointedly indicating the defect in the medical evidence is the examination by Dr. Cameron. He examined the man from the physical standpoint, and as to his early recollections, and as to current politics, but when asked 'as to the capacity to manage his affairs,' the off-hand answer was, 'I don't know what his affairs are.'

NOT PROPERLY PUT BY DOCTOR.

"Dr. Clarke, after a long statement as to the physical condition, has the question put to him, 'What conclusion did you come to with regard to his capacity to manage himself or his affairs?' answers very significantly, 'I think he is quite capable of advising anyone in the way which his affairs should be directed.'

"I do not think this is the proper way to put the question. Whether Fraser is competent to manage his own affairs is the very issue which the court has to determine, and the opinion of the court is to be based upon the facts placed before it, and the court is not asked to surrender its function to the witness and to be asked to adopt as its judgment the opinions of a witness, but the important matter here is that the witness, obviously most anxious to aid the defence, declines to assert that in his opinion the man has the capacity to manage his own affairs, and will go no further than to say, 'He is capable of advising anyone in the way which his affairs should be directed,' which is not what is required.

EVASION OF REAL ISSUE.

"That this is not a slip, but a considered evasion of the real issue, is made plain by the cross-examination. When he is asked 'Did he say anything which showed and demonstrated to you that he was capable of attending to his \$80,000 business?' 'A. What I said was that I thought that he was quite competent to give advice with regard to the care of that. I would not expect a man of that age to,' the answer ends there.

"The other expert, Dr. Beemer, when asked the same question, answered, 'He is quite capable,' but he had been cross-examined upon an affidavit made at an earlier stage."

The witnesses for the attack on the man's sanity were Dr. Ryan, Dr. A. J. Johnston and Dr. Cotton.

DR. BRUCE SMITH'S EVIDENCE.

Dr. Bruce Smith had examined Fraser, on behalf of the defence, and was not examined at the hearing, it was said, because these experts only could be called.

"We thought it would be of assistance to hear his views and asked him to attend.

"He first examined Fraser on the 13th of June, when Drs. Ryan and Johnston were present, and his opinion then was that he was not in a sane, sound mental condition, and he did not disagree with the opinions of Drs. Johnston and Ryan, that there was then marked evidence of senile deterioration. This view he

confirmed, after having heard the evidence, and said that the man was incapable of taking care of himself and his affairs, and it would have been much better if a committee had been appointed long ago.

"Dr. Caven, at our request, examined Fraser, primarily to ascertain physical condition, and to enable us to determine whether we could order his attendance before us. His report is in writing. As to his mental condition he says: 'I have thoroughly tested him, especially along the lines suggested by the court, and in my opinion he is sane and in his right mind. I have come to this conclusion from his answers to the following questions: The reasons being thus given, save for the advantage of professional skill, we are as well able to judge as to the man's sanity as Dr. Caven.'"

The questions and answers are as follows:

"What is your full name?"

"Michael McDonald Fraser."

"Where were you born?"

"County of Kerry, south of Ireland, on the Island Valentia, where the cable lands."

"Where do you live?"

"Midland."

"What is your age?"

"Over four score."

"In what year were you born?"

"1828."

"What year is this?"

"Not sure, for memory is forgetful."

"What month is this?"

"April."

"What day of the month is this?"

"April 6th, I think, though I am not quite sure."

"What day of the week is this?"

"Friday."

"Do you understand what you read?"

"Just as well as ever, though lately I have gotten lazy, but no wonder in a fellow over fourscore years. You know David was dead before that age."

"Can you do things as well as you could?"

"Work as well as ever, but have not the inclination."

"Do you sleep well?"

"Excellent."

"Do you sleep during the day?"

"Very little. I always disliked daylight sleeping, night is the time for sleep."

Then follows: "In regard to the marriage, in asking him the circumstances connected with his engagement and marriage, his answer was, "I saw the little girl, loved her, proposed to her, she accepted and this is the whole thing. She has been a capable little helpmate. She has been in Toronto about ten days. I saw her first eight or ten days previous to the marriage on January 13th, 1910. I believe I saw her in the summer, but cannot call it to mind."

"Where was the license bought?"

"I really do not remember about the license, but suppose her father did."

"Where was the ring obtained?"

"I suppose I bought the ring in a jewelry store. I do not remember where, but I remember putting it on the bride's finger."

NOT COMPETENT.

We must deal with the matter, not merely upon these answers, but also upon the statement of the man himself to us. Dr. Caven had no knowledge of the transactions with the property disclosed on the evidence, or of the circumstances relating to the marriage.

Mr. Macdonell: Doctor, what test did you subject him to to gain some information as to his capacity for managing his business affairs? A. I did not make any test about that especially. Q. Were you impressed that he is said to have an estate of about \$80,000? A. I had not that information. Q. You did not know that? A. No. Q. In fact, you are not prepared to say what his capacity, from a business standpoint, to manage \$80,000 would be? A. Further than that, I say that the fact of his stating that he did not read as much as he used to, he used to be a great reader he told me, and now that he is getting lazy, lazy mentally, as any man of his years would, and therefore *I would think a man in that condition ought not to manage his own affairs.*

From all the medical evidence it is, I think, quite clear that practically all the doctors who have in any way faced the real issue, the capacity to manage his own affairs, agree that Fraser has no such ability.

I can give no other answer to the question before us than to find Michael Fraser is of unsound mind, and unable to manage himself or his affairs, and if it be in any way material I also find that at the time of the hearing before Mr. Justice Britton he was of unsound mind and unable to manage himself or his affairs.

This deals with one topic only, but serves to show how little the old man understood his transactions.

Personals

Dr. Alex. D. Blackader has been elected President of the American Therapeutic Society.

Dr. D. Gibb Wishart, of Toronto, left on a trip to England and the Continent June 10th.

Dr. Bruce Riordan, of Toronto, spent the greater part of July recuperating after his serious illness in New London, Conn.

Dr. N. H. Alcock. Lecturer on Physiology in St. Mary's Hospital Medical School, London, has been appointed Professor of Physiology in McGill.

Dr. George Adami, of Montreal, has been elected President of the Association of American Physicians. Among the other officers are: Dr. L. F. Barker, Johns Hopkins Hospital, Vice-President, and Drs. R. D. Rudolf, of Toronto, and Dr. Oscar Klotz, of Pittsburg, members of the Executive Committee.

Dr. Allen G. Brown has been appointed Resident Physician of the Children's Hospital of New York, in the service of Dr. L. Emmet Holt. He graduated from the University of Toronto in 1909, and after graduating spent one year as Resident Physician in the Sick Children's Hospital, Toronto.

We are pleased to be able to report that the latest reports respecting the condition of Dr. Andrew McPhail, the editor of the *Canadian Medical Association Journal*, are favorable. It was expected that he would leave the hospital before the end of July. Although both eyes were seriously injured, we understand that one has quite recovered and the other is progressing more favorably than was at first expected.

Dr. H. B. Anderson, Toronto, returned to his home July 11th, after a trip to Europe. He went by way of the Mediterranean, and after landing in Naples visited the various cities in Italy, then going on to Vienna, where he remained about two months, then to Berlin and other cities of Germany. He then went to London, where he remained for a few weeks. While in the

various medical centers he studied very carefully modern laboratory methods and the various systems of clinical teaching. He was away from Toronto about five months.

Dr. Geo. A. Bingham, of Toronto, was seriously injured in a runaway accident July 8. His horse ran away on Queen Street East, the carriage was caught between a trolley car and a delivery wagon, and Dr. Bingham was thrown with much force on to the pavement. He was picked up and carried by the ambulance to St. Michael's Hospital. It was there found that he was suffering from concussion of the brain, some scalp wounds and a serious compound fracture of the tibia. He regained consciousness in two or three hours, but he suffered from a certain amount of shock for some days.

Obituary

DUGALD LEITH McALPINE

Dr. D. L. McAlpine, of Vancouver, died April 30th, aged 77. He was born in Scotland, and came to Canada at an early age. He graduated M.B. from the University of Toronto in 1863; he then went to London, Ont., where he practised for 18 years. In 1884 he went to British Columbia, where he acted as surgeon on the Canadian Pacific Railway for some years. After retiring from practice he lived in Vancouver until his death. He was the father of J. A. L. McAlpine, of London, Ont.; Dr. Kenneth K. McAlpine, of Seattle, and Dr. Thomas K. McAlpine, a member of the medical staff of the General Hospital at St. Louis, Mo.

Book Reviews.

Progressive Medicine. A Quarterly Digest of Advances, Discoveries and Improvements in the Medical and Surgical Sciences. Edited by HOBART AMORY HARE, M.D., Professor of Therapeutics and Materia Medica in the Jefferson Medical College of Philadelphia; assisted by Leighton F. Appleman, M.D., Instructor in Therapeutics, Jefferson Medical College. Vol II. June, 1911. Philadelphia and New York: Lea & Febiger.

The contents of this volume are: Hernia, by Coley; Surgery of the abdomen, by Gerster; Gynæcology, by Clark; Diseases of the Blood, by Stenzel, and Ophthalmology, by Jackson. We have said many times, and we repeat it again, that this work has no equal in the English language. It gives in a few concise sentences the whole gist of medical progress during the past year, with references so abundant that anyone caring to read further can readily do so.

This particular volume is especially good. There are two or three pages on the stomach which contain information that every physician should know—in fact, unless he does know what the X-ray is doing in that department of medicine, he is far behind the times.

The British Sanatoria Annual. London: John Bale, Sons & Danielsson, Ltd., Oxford House, 83-91 Great Titchfield St., Oxford St. W.

This little book of 130 pages gives a concise description of the various institutions in the British Isles where tuberculosis is treated. It contains many beautiful illustrations.

Reports From the Pathological Department, Central Indiana Hospital for Insane, for the years 1906-7-8-9. Indianapolis: Wm. B. Burford, Contractor for State Printing and Binding. 1910.

For some years the Superintendent, Dr. G. F. Edenharter, has gone to a great deal of trouble to publish his results, which are of much benefit to his fellow-practitioners. Those who have been fortunate enough to secure a copy are deeply grateful to the Indiana Asylum for the inspiration they have received to go ahead and do better work.

Old Age Deferred. The Causes of Old Age and its Postponement by Hygienic and Therapeutic Measures. By ARNOLD LORAND, M.D., Carlsbad, Austria. Translated with additions by the author from the Second German Edition. Philadelphia: F. A. Davis Company, Publishers. 1910.

This book is based on the view held by the author that "Old age is a chronic disease due to degeneration of the glands with internal secretions, of the thyroid, the sexual glands, and the adrenals in particular." Hence, conditions such as arteriosclerosis are said to be due primarily to faulty thyroid metabolism. With many of the views here expressed there will be considerable differences of opinion, but there is no gainsaying the fact that attention to the hygienic principles here set forth would undoubtedly be conducive to longevity. But life in length of years is not everything. "Better fifty years of Europe, than a cycle of Cathay." Perhaps one might substitute America for Europe, for we fail to see how anyone who has to make his own way on this continent could live up to the regime prescribed by Dr. Lorand and have enough time left to earn his daily bread. For instance, we are told to rest for an hour before and after meals. Imagine a modern business man doing that. No one can deny that he might live to be older, but we do not imagine he would ever obtain enough of this world's goods to make his life worth living.

In the abstract the book is well worth reading. One gets some excellent ideas, and we can recommend it to anyone as "something new."

Selections.

Gonorrhoeal Iritis.

The use of gonococcal vaccines for the various manifestations of gonorrhœa has been the subject of widely divergent opinions. It seems now to be generally thought that for the acute urethritis they are useless, if not worse; but that for some of the later and chronic lesions caused by the diplococcus of Neisser vaccine treatment succeeds where no other kind will. In the *Archives of the Middlesex Hospital* Mr. Lang expresses his high opinion of massive doses of this vaccine for all cases of iritis which can be traced to a gonorrhœal origin. They cut short the pain and duration of the iritis; rheumatic pains and swollen joints are also dispersed at the same time. Up to the present he has not had a case of relapse, but as the first cases were treated only three years ago, he feels it a little early to say with confidence that absolute cure is always attained. To ensure the best results Mr. Lang recommends massive and increasing doses. Two doses of two hundred, of three hundred, and of five hundred millions are given at intervals of a week; and a final dose of one thousand millions, and even a further one half as large again, may end the course of treatment. These enormous doses are given only when the eye is alone affected; when there are other lesions elsewhere smaller quantities are injected. There should be no reaction, either at the seat of injection or constitutionally as a result of it.—*The Hospital*.

Fatal Air Embolism from Injection of a Solution of Sulphate of Zinc to Induce Abortion. A. PALMER, M.B., F.R.C.S. Edin.

A widow, aged 24, was using an injection per vaginam with an enema syringe—presumably to induce abortion—when she jumped up quickly and said she was in terrible pain, and that her stomach was swelling. She almost immediately collapsed, clenched her teeth, frothed at the mouth, and died.

The history was similar to that of death from air embolism. The necropsy showed small hæmorrhages beneath the visceral pleuræ, and larger ones beneath the diaphragmatic pleuræ, and the peritoneum. The lungs were œdematous and engorged with dark blood. The right side of the heart was distended with dark

fluid blood containing bubbles, but no froth. The liver was greatly engorged. The uterus was enlarged and unusually soft even for pregnancy. It contained a male foetus $8\frac{1}{2}$ inches long. The amnion was not ruptured, but was stripped off the lower pole of the uterus. The placenta was situated anteriorly, and was a good deal torn below. The mucous membrane of the vagina was apparently whiter than normal. A packet of sulphate of zinc was found in the room. The Government Analyst found zinc and tracts of manganese in the organs, and zinc in the syringe.

A similar case in which the drug used was permanganate of potash has been recorded.—*The Medical Review*.

Subcutaneous and Intravenous Administration of Grape Sugar.

Berendes (*Zentralbl. f. Chir.*).

In cases where gastric alimentation is contraindicated, it is still customary to take refuge in nutritive enemata, although it has been repeatedly shown that they are entirely ineffectual. Berendes recommends Kausch's method in such cases. This consists in the subcutaneous or intravenous injection of 5 to 7.5 per cent. solutions of grape sugar. These cause no more discomfort than similar injections of physiological salt solutions and are entirely harmless. If one liter is injected in the twenty-four hours this represents the administration of 200 to 300 calories daily, an amount which may well suffice to tide the patient over his period of semi-starvation. After several days of this treatment a slight glycosuria may set in, but this involves the loss of only 5 per cent. of the sugar administered.—*Interstate Medical Journal*.

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THE EARLY DIAGNOSIS OF PULMONARY TUBERCULOSIS*

BY F. C. NEAL, M.B. (TORONTO), M.R.C.S. (ENG.), L.R.C.P.
(LOND.), PETERBOROUGH.

To-day, when so much stress is being placed on the value of early diagnosis of different diseases, perhaps in none is an early diagnosis of more importance than in pulmonary tuberculosis—at least, none comes so frequently under the observation of the general practitioner.

By an early diagnosis, not only are the patient's chances of recovery greatly improved, but we gain an important step in preventing the spread of the disease.

As the subject is such a wide one, I thought it best to dwell on some of the points which were impressed on me during the years I spent at Saranac Lake.

In making a diagnosis, we have to consider the symptoms and physical signs; however, as it is the former which causes the patient to consult his physician, and as the latter, in early cases, are often uncertain, or may be absent, we shall dwell first on the *symptoms*.

In regard to a patient's history, a negative family history is of no value, but a history of the patient's previous illnesses is of importance. Not only should we enquire carefully in regard to previous illnesses, such as pleurisy, pneumonia, bronchitis, glandular disease, influenza, the occurrence of ischio-rectal abscesses, or blood-spitting, but also into the possibility of exposure to infection, such as having nursed a sick friend, or having worked in a factory or an office beside a person suffering from pulmonary trouble.

Coming to the patient's present condition, he may complain

* Read at the meeting of the Ontario Medical Association, Niagara Falls, May, 1911.

of the vague symptoms of toxæmia, such as irritability, languor, chilly sensations, cold and clammy condition of the hands and feet, anorexia, slight dyspnoea on exertion, slight loss of weight, or fatigue, especially during the afternoon.

Or the patient's symptoms may be such as to direct our attention away from the pulmonary condition, and appear as if gastric in origin. The onset with dyspepsia is very frequent, especially dyspepsia of the acid type, and vomiting with a clean tongue and with absence of gastric catarrh, should always lead to a careful examination of pulmonary apices. The vomiting is usually reflex, from irritation in the mucous membrane of pharynx or larynx, pressure by enlarged bronchial glands on the trunk of the pneumogastric nerve, or irritation of the same nerve in the lung by the cough.

Again, the symptoms of neurasthenia may be so marked as to mask the real trouble, and I may say that this has been markedly impressed on me by the large number of cases I have seen previously diagnosed as neurasthenia.

At times the onset, especially in young girls, may simulate chlorosis, and to make a diagnosis between chlorosis and pseudo-tuberculous chlorosis may be difficult; fever may be present or absent in both; but in the former increase of fat is more frequent, and blood tension usually high, while in the latter, low. A history of exposure may be of aid, but may require the tuberculin test to differentiate; Marcus Beck has shown that 50.3 per cent. of chlorotics react to tuberculin.

Now in regard to symptoms pointing directly to pulmonary trouble, perhaps the most important is the cough. At first the cough may not be prominent; it may be dry with no expectoration, it may be mere clearing of the throat, or it may be paroxysmal and accompanied by vomiting. As a rule, it is more pronounced in the morning, or on lying down, or may only occur on loud speaking, laughing, or on taking a long breath. But any cough or bronchitis existing for six, eight, or ten weeks, especially if accompanied by any other symptom, as slight fever, or loss of weight, should call for repeated examination.

Hæmoptysis or blood-spitting is frequently the first and only symptom, and the patient who expectorates one or two drachms of blood should be assumed to have pulmonary tuberculosis (1), unless other definite cause for the same can be found.

It is usually noticed first in the morning, and is preceded by tickling in the throat, and cough. We must not be thrown off our guard by a period of apparent health, that may follow hæmoptysis, or by absence of physical signs for weeks, (2) for, as

Lawrason Brown states, 90 per cent. of all patients with hæmoptysis sooner or later show signs of active tuberculosis.

Again, idiopathic pleurisy, especially sero-fibrous, is always suspicious of tuberculosis and should be treated as such, (3) for Landouzy states that 98 per cent. of such cases are tuberculous, and Marcus Beck has shown that 73.2 per cent. of them re-act to tuberculin, (4).

However, instead of pleurisy, patients frequently complain of indefinite pains in the chest, such being commonly regarded as rheumatism, pleurodynia, intercostal neuralgia, or stitches in the side. These pains are usually localized and tend to recur in the same place, being most (5) commonly found under the shoulder blade and radiating to the shoulder joint and upper arm. They are aggravated by such conditions as sneezing, coughing, fast walking, or when patient is suffering from a cold. These indefinite pains, together with cough, are considered by Kinghorn as probably the most frequent early symptoms of tuberculosis.

Again, persistent hoarseness and laryngeal huskiness are sometimes early prominent symptoms, while in a few cases marked breathlessness on exertion, or even asthmatic attacks, may be the mode of onset.

Before taking up the critical signs, there are two most important symptoms which I have purposely left to the last, namely, fever and rapid pulse. A fast pulse is a very striking early symptom. It may occur independently of fever, and should, especially in young people, always arouse suspicions of tuberculosis, unless other definite cause is known. At first the pulse is more easily excited, and acceleration occurs after meals or on slight exertion, and toward evening may reach 90 to 100 per minute.

In order to ascertain the presence of fever the temperature should be taken every two hours for a week or more. If necessary, the patient should be taught how to take and how to record the temperature, so that the physician may not only learn of the presence of fever, but also of the daily range of the same. The range in tuberculous cases may be greater than normal, although the maximum temperature may reach little above normal. While the normal maximum temperature in health is probably 98.4 degrees to 98.8 degrees, and in some cases may even reach 99.3 degrees, a slight afternoon or evening rise of 99 to 100 degrees, which persists without known cause, and is accompanied by fast pulse, anorexia, weakness or loss of weight, is strongly suggestive of a tuberculous condition. At first temperature may

only be present after meals, after exertion, or, in women, during menstruation, and at times may closely simulate that of a typhoidal or malarial condition.

PHYSICAL EXAMINATION.

Before dealing with physical examination, there are several important points to be remembered regarding physical signs:

1. They may be absent in early cases.
2. They may be characterized by their slowness even when the symptoms have been of long duration.

3. They may be marked by their variability, being often most easily detected in the mornings or on damp days. Therefore, in many cases, it is only after repeated examination that one can come to a definite conclusion regarding the presence or absence of physical signs, and one should bear in mind that absence of physical signs is no proof of absence of pathological conditions.

The examination should always be made with the patient's clothes removed to the waist, and with the patient in a good light. In some cases it is well to examine the patient in a recumbent position, as well as standing or sitting. Just here, if I may be permitted to digress for a moment, I would like to call attention to the necessity of a careful supervision of other members of a family where one member is suffering from tuberculosis, for frequently have I seen cases where other members, upon examination, have shown incipient lesions, or even more advanced lesions than the patient under treatment.

Proceeding, then, with the steps in examination; *inspection*, we find in early cases, may reveal but little, as Pope and Brown found 83 per cent. of chests normal in incipient cases. However, Brown finds limitation of movement at apex, accompanied by exaggeration of movement at the base, a valuable sign. In addition, inspection gives us data regarding patient's bodily condition and nutrition.

On palpation, pain is present in a number of cases, especially between spine of scapula and spinal column; and if one finds fremitus over left apex, equal to that over right, slight changes may be assumed.

In *percussing*, we should use light percussion, and should endeavor to make careful delineation of the movements of base of lung (6), and more particularly of resonant areas above the clavicles. The latter method is practised by noting width of resonance along upper anterior border of trapezius muscle, while patient stands relaxed, and with head perfectly straight. Thus one is often able to detect a shrinkage or narrowing on suspected

side. Dulness is usually found in inner part of supra-clavicular region, and the axillary region should be carefully percussed up to its apex, as one frequently finds a spot of trouble located there.

Although much may be learned from the preceding means, still it is from auscultation that one learns most. It should be remembered that no auscultatory findings of themselves are indicative of tuberculosis; only by their locality and persistency, combined with other symptoms, do they aid in diagnosis.

A careful study should be made of inspiration and expiration separately and a comparison made on same and opposite sides. The earliest changes may occur in inspiratory murmur, and a little later in expiratory murmur, but Lawrason Brown (7) states that a slightly high-pitched, prolonged expiratory sound is much more common as an early sign than a roughened inspiratory sound. Besides this "roughened breathing," and prolonged expiration, one may hear diminished or feeble breathing, and next in importance to the changes in breath sounds is the presence of râles. In the majority of cases, râles are heard only on full inspiration, following cough (8). In some a complete expiration followed by a cough, which in turn is followed by a quick, full inspiration, will produce râles which may be heard in no other way. In only a few cases do râles disappear on coughing, while râles heard on quiet breathing usually indicate that disease is past incipency (9). Friction sounds limited to the upper lobe or near axillary line between fifth and eighth ribs are frequently heard, and are of importance. The râles at first heard are usually fine and crackling in character, and are heard in supra-spinous fossa, clavicular sternal angle, supra-clavicular fossa, interscapular region, below the fourth dorsal vertebra, and along vertical border of scapula: and in children, in fifth and sixth spaces outside of nipple line (10).

Interrupted cog-wheel breathing and bronchial breathing are not found as early as other sounds, and point to consolidation. Vocal resonance may also at times aid in detecting slight consolidation.

After the study of symptoms and physical examination, we have the accessory aids in diagnosis, of which, perhaps, the sputum examination is the most important. In early cases it may be difficult to secure any expectoration, and women particularly are liable to swallow their sputum. It is necessary to make repeated examination of sputum, before considering it negative, and even where ordinary methods fail we may find bacilli by use

of either the so-called antiformin method* or by Doppel's method. It should be remembered that bacilli are absent in about 65 per cent. of early cases, and when absent, animal inoculation may be of some use; we may use either the intraperitoneal or subcutaneous method.

Regarding agglutination and serum work, Kinghorn and Twitchell, after careful research, came to the conclusion that the serum diagnosis as used by Arlong and Courmont is of no practical clinical importance in early diagnosis.

As a final aid we have the tuberculin test, which may be used in several different ways, but as only two are commonly used we shall pass quickly over the other methods. The first is the Moro, or so-called percutaneous method, in which a small portion of ointment consisting of tuberculin and lanolin is rubbed into the skin. This, however, is not satisfactory, as it is not absorbed uniformly, absorption depending on force used in rubbing. It is also said to produce fever reactions in slightly healed lesions.

Then comes Calmette's or Wolff-Eisner's Ophthalmic or Conjunctival Test, in which a drop of 1 to 5 per cent. solution of O. T. is placed on lower eyelid, which is held down for one-half minute afterwards; the head should be held well back, and the patient not allowed to rub the eye. However, this test has occasionally resulted in bad effects on the eye, such as causing keratitis or phlyctenular conjunctivitis, and should not be used as a routine method.

Next is the cutaneous or Von Pirquet test, or vaccination method, in which, after cleansing the skin, preferably that of the forearm, a drop of 20 or 25 per cent. solution of O. T. or undiluted O. T. is placed on the skin. Then a slight abrasion of the superficial layers of the epithelium is made, by rotating, in the drop, a small chisel-shaped instrument, devised by Von Pirquet, or, as preferred by Wolman and Hamman, slight superficial incisions are made by means of a scalpel. In either case care should be taken not to draw blood. As a control, we may repeat

*Antiformin Method.—Add 10 c.c. of sputum to 2.5 c.c. of antiformin; if sputum is very thick and tenacious, or not in sufficient quantity, use a smaller amount diluted to 10 c.c. with distilled water.

Ordinary centrifuge tubes which have been cleaned and kept in a mixture of potassium bichromate and sulphuric acid may be used.

Prior to use wash tubes thoroughly in distilled water, and after filling with antiformin mixture cork with new cork, shake well and allow to stand for 24 hours at room temperature; then shake again and centrifuge.

Now drain off the supernatant fluid, fill tubes with sterilized normal salt solution, again cork, shake and centrifuge.

After washing the second time as before, to rid sediment of all alkali, centrifuge tubes a third time and draw off supernatant fluid.

Then smear sediment on slide with loop or capillary glass tube, dry, fix and stain in usual way.—Patterson, *Journal Med. Research*, April, 1910.

the above, on the same arm, using a 50 per cent. solution of glycerine instead of tuberculin solution. The drop should be allowed to remain for three to five minutes, and then may be covered with a small piece of gauze, held in place by adhesive plaster. If reaction occurs, it begins in four to six hours, with slight redness, which reaches its height in twenty-four hours, and in forty-eight hours has markedly retrograded. In some cases there may be a slight elevation or papule, which is more apparent to touch than to sight. Occasionally it takes the form of a wheal, which later turns to papule, and in rare cases there occurs a bleb, small vesicles, or a form of herpes (11). Besides this typical reaction, we may find a premature reaction, characterized by a rapid course and slight intensity, reaching its maximum in ten hours, and then rapidly disappearing. This type is said to occur in cases of manifest tuberculosis which are not doing well. Then we may find a so-called delayed reaction, which reaches its maximum about the end of the second day, and may persist unchanged for some days. This type is supposed to occur in patients with inactive or latent tuberculosis, and is of no value. This cutaneous test, as shown by Von Pirquet and Holt (12), is of most value in children, and the younger the child the more clinical importance is attached to the test. In adults it is doubtful if much reliance is to be placed on a negative cutaneous reaction, as cases occur where patients showing such negative reaction show marked positive reaction to sub-cutaneous test.

Regarding the sub-cutaneous method, Trudeau has probably done more than any other man in America to bring forward the use of tuberculin as a diagnostic aid, and to-day we have abundance of pathological proof as to its value.

Fraenkel, for example (13), has collected 8,000 observations, and the results of tuberculin reaction coincided with autopsy findings in all but a little over 2 per cent., while Voges (14) in 7,327 observations found an error of only 2.7 per cent. Koch cites the work of E. France (15), who tested 55 persons in lunatic asylums with tuberculin, and 45 reacted; 29 of those came to autopsy at a late date, and every one was found tuberculous, while of those who did not react five came to autopsy and all were found free from tuberculosis.

Its use is especially indicated in cases of apical catarrh without tubercle bacilli in the sputum, especially if influenza is prevalent; and in those cases where there are indefinite symptoms, and some physical signs, but no tubercle bacilli in the sputum; also when it is necessary to convince patients or satisfy

friends or relatives as to presence of tuberculosis, after all other means of diagnosis have been exhausted (16).

When properly given it is free from danger. Trudeau states (17) that tuberculin is a most searching, delicate test, and safe in incipient cases, and that there is no experimental proof that he is aware of that the test aggravates the lesion, or scatters bacilli to distant parts. In giving the test the patient should be kept at rest and temperature taken every two hours for two or three days. If the temperature is above 99.5 degrees, Kinghorn considers that the test is contraindicated, while Brown does not use test if oral temperature reaches 100 degrees any time during the day. The other contraindications are recent hæmoptysis (within a month), general glandular involvement, epilepsy, nephritis or extensive physical signs. Again, if patient is nervous, it is advisable to use an initial dose of physiological salt solution.

The tuberculin solution used should always be fresh—at least not more than three days old. It is made up with a 0.5 per cent. phenol in 0.85 per cent. sodium chloride solution, and kept in a cool place, away from light, in rubber-stoppered colored bottles.

The injection is given in the back after cleansing the skin with alcohol, and is preferably given in the evening. The initial dose should be $\frac{1}{2}$ to 1 milligram, followed in two or three days' interval by 2 to 3 milligrams; then 5 milligrams, and finally a maximum of 10 milligrams is reached, if no reaction occurs; the last dose may be repeated in four or five days. If rise of temperature of 2.5 or 3.5 of a degree occurs, repeat the previous dose. In children, the initial dose should be about 1-20 of a milligram, and maximum dose not more than 5 milligrams.

The temperature should be taken every two hours, and an increase of .9 to 1 degree should be considered a positive reaction. The reaction may occur as early as four or five hours after, or as late as two to three days. In addition to the temperature reaction, there may be a local reaction, constitutional symptoms, or a focal reaction. The local reaction is indicated by a tenderness and swelling at the site of injection; constitutional symptoms usually coincide with the temperature, but the height of fever and severity of constitutional symptoms may be quite independent of one another. The constitutional symptoms may be those of general malaise, although they may be severe, with vomiting, abdominal pain, and even delirium. The focal reaction may be indicated by the increased cough, expectoration, pleurisy and

oppression in the chest. If auscultated at the height of reaction, there may be increased physical signs, and appearance of râles, not heard before, and tubercle bacilli may even be found in the sputum. During the reaction, which is usually over in two to three days, but may last a week or longer, the patient should be kept on fluid diet, and should be kept in bed for several days after the temperature has become normal.

CLINICAL SIGNIFICANCE.

While reaction is no criterion of the extent of the disease, the clinical value is usually in proportion to the smallness of the dose and the quickness of response (18). Thus, a recent case usually reacts strongly to a small dose, while weak reactions to large doses usually indicate that the disease has existed a long time and has assumed a chronic course (19). Therefore, in conclusion it would be well to emphasize the following points:

1. The absence of tubercle bacilli in sputum of little or no value.

2. The necessity of repeated physical examinations.

3. That absence of physical signs does not exclude pathological conditions, and if there is persistence of such symptoms as rapid pulse, slight evening rise of temperature, cough, loss of weight, etc., without a definite cause, we should treat the case as being tuberculous.

4. That the tuberculin test, although seldom necessary, is a valuable aid in conjunction with other symptoms and physical signs.

5. That the diagnosis must not be based on one symptom or sign alone, but on a careful study of the case as a whole.

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THE TREATMENT OF CHRONIC CONSTIPATION*

BY R. D. RUDOLF, M.D., C.M., F.R.C.P. (LOND.),

Professor of Therapeutics, University of Toronto.

Chronic or habitual constipation is perhaps the most common ailment to which mankind is subject. Vast numbers of people may be said to take their point of view of life from the state of their bowels. If they happen to remember that the bowels have not moved on any particular day the outlook is gloomy, while if this function has been satisfactorily performed it is bright accordingly. If, however, they should chance to forget the omission in most cases they will feel no ill effects. The conclusion must be that the result is largely psychic.

To attain the desired regularity, the laity resort very largely to medicines, and the amount spent yearly upon these, for the most part, patent medicines must be enormous. Many, especially perhaps the domestic servant class, must spend a considerable percentage of their wages upon such nostrums.

There has lately been a great wave of opinion against such wholesale purging, and some physicians have gone so far as to declare that practically all cases of chronic constipation may be permanently cured by psychic means alone. Two years ago Dr. I. P. Lyon, of Buffalo, read a paper before the Association of American Physicians at Washington, in which he stated that he had had 68 cures out of 69 cases of chronic constipation thus treated.

When aiming at any object it is necessary to have the goal clearly in view, and the question naturally arises as to what is the normal as regards the evacuations. The general and probably correct view is that the bowels should move once daily, and indeed in India this view has been raised to a religious pitch, and one sees a high caste Hindoo wearing his sacred cord over the left ear until his bowels have moved. While he thus wears the caste symbol he is unclean, and hence a powerful and usually successful psychic impulse towards regularity is constantly furnished to him.

But the frequency with which the bowels move is not a hard and fast rule, and one occasionally sees people who do not relieve themselves more than every second or even third day who seem

* Read at the meeting of the Ontario Medical Association, Niagara Falls, May, 1911.

to be in perfect health. On the other hand, some healthy persons appear to require that their bowels move twice a day.

One might define chronic constipation as a state in which the bowels move less frequently and thoroughly than is the custom of the individual under consideration.

Cases of chronic constipation may be classified in different ways. A. F. Hertz, who has studied the movements of the alimentary canal so thoroughly by the aid of bismuth and X-rays, would put them all under two headings, viz.: (a) Those, called intestinal constipation, in which the passage through the intestine is delayed while defæcation is normal, and (b) those cases, called ones of *dyschezia*, where there is no delay in the arrival of the fæces in the pelvic colon, but their final expulsion is not adequately performed. (*Lancet*, April 29th, 1911, page 1120, Vol. I.). According to Hertz, in normal people the rectum is usually empty, and when the fæces enter it from the pelvic colon a sensation is at once produced by the stretching of the muscular walls of the rectum, which is interpreted by the brain as a desire for defæcation. If the desire be resisted, very soon the rectal wall relaxes and there is no longer the same tension, and thus the sensation disappears, although the contents are still in the bowel. Hertz has shown by experiment that even in the most marked cases of chronic constipation of his second class the muscular sense is not dulled, and if a pressure of say 50 mm. of mercury be artificially produced in the rectum by the inflation of a rubber bag, the desire for defæcation is as easily set up as in the normal. The trouble is that the tone of the bowel has so lessened that it takes a great bulk of contents to produce the necessary tension.

From a therapeutic point of view one may group all cases of chronic constipation according to their etiology under the following headings:

1. Bad habit.
2. Diet errors.
 - (a) Not enough indigestible material, such as cellulose.
 - (b) Not enough water.
 - (c) Astringent.
3. Too complete absorption of fluids, due to
 - (a) Exercise.
 - (b) Sweating.
 - (c) Urination.
4. Deficiency of intestinal, biliary and pancreatic secretions.
5. Loss of tone of the muscular wall of the bowel.

6. Obstruction, due to
 - (a) Foreign body or hard faeces.
 - (b) Spasm.
 - (c) Paralysis of a portion of the bowel.

Very often several of these causes are at work in the same case. For instance, an individual may have acquired the bad habit of not going regularly to stool, may take an insufficient amount of fluids, and may have a hypotonic muscular wall to his bowel.

In treating cases of chronic constipation it is essential that the underlying cause be ascertained and, if possible, removed.

The patient should be enjoined to go regularly to stool, and this at a fixed hour every day. If not successful then I believe it is better to miss that day altogether and wait for the same hour of the succeeding day. This is contrary to what Hertz advises, but I believe that the muscles of defæcation may thus be trained to periodicity.

This regular habit is often sufficient, and it is a great mistake for the patient to at once fly to laxatives. By resorting to these the natural function is disturbed, and it may take several days before the rhythm is again established after a purge.

The diet should be such that it contains lots of debris, and thus ought to include much vegetable material—vegetables, salads and fruits, especially prunes and figs, the neutral salts of which increase the fluidity of the contents of the bowel. Astringents, such as milk, especially boiled milk and things made with it, and much farinaceous food should be taken in great moderation. Strong tea is astringent, the least so being China tea.

Fluids should be taken in plenty. A tumbler of cold water taken night and morning is valuable. Fluids are especially indicated when excessive sweating from exercise or disease has produced an undue absorption of fluids from the bowel. One often sees healthy athletes who suffer from constipation, with small, hard stools, and in whom lots of fluids is all that is required to give them relief. Lipowski (*Berliner klinische Wochenschrift.*, July 19th, 1909) noted that a normal individual could retain his intestinal contents for one or even more days beyond the usual without any alteration occurring in their consistency, while in the case of the constipated they became hard and dry. This is due to an abnormal degree of absorption. In order to test the point, he injected 200 c.c. of normal saline solution into the bowel and syphoned it off in 15 minutes. The normal individual was found to have absorbed 30 to 90 c.c., while the constipated

one absorbed 150 to 180 c.c. He found that when he treated such cases by injecting liquid paraffin the night before the constipation disappeared. The action of the paraffin was to so coat the mucous surface of the rectum that absorption did not occur.

When the tone of the bowel appears to be at fault, exercise, cold baths and abdominal massage are useful. Many healthy men find that when they are out on survey or having other hard exercise their bowels are regular, while when living more sedentary lives they suffer from habitual constipation.

Lauder Brunton points out that the axis of the rectum points toward the lower end of the sacrum and perineum behind the anus, and says very truly that a little digital pressure here is often sufficient to so change the axis of the faecal mass as to produce a motion. This pressure probably acts through the mass upon the wall of the bowel as certainly it produces peristalsis.

In the majority of cases of chronic constipation we can by enjoining regular attendance at stool, giving plain, bulky and non-astringent diet, with lots of water, and advising plenty of exercise, completely cure the condition.

But in many cases we will require the aid of some drug in our endeavor to establish the regular habit of the bowel.

Drugs act here in two ways—either by increasing the watery contents of the intestine, so that these contents are more bulky and more easily moved, or else they stimulate the muscular wall to better tone and contraction.

The various salines act by increasing the fluid contents of the large intestine. Exactly how they do this is still not certain, but they bring about this effect partly by inhibiting absorption and partly by increasing the flow from the intestinal wall. This latter effect is specially seen when the salines are given in concentrated form. They seem to have no direct effect upon peristalsis, but the contents of the bowel, being increased in bulk and weight, have some effect in this direction. If the salines are given to a bedridden patient, however, the peristalsis is not very evident, and hence the difficulty of purging such a patient by salines alone. The moderate habitual use of the salines is very useful in the aged, and Lauder Brunton has well called magnesium sulphate the tonic of the aged. But they should be given combined with some aromatic, as otherwise the patients feel them, as they express it, as "cold on the stomach."

All salines act in much the same way, and it is a good plan where the patient has to take them for any length of time to vary

them, giving, say, Hunyadi Janos water, or one of the other natural waters for a time, and then changing to sodium sulphate or phosphate, etc.

For laxative purposes they should be given well diluted with water on rising in the morning.

Most of the vegetable cathartics in medicinal doses act by increasing the peristalsis, and thus hurrying on the contents of the intestine. In the very numerous cases where the constipation is due to want of tone and contraction of the muscular coat of the bowel these drugs are of great value. The ones most commonly used are senna, aloes and cascara sagrada. They are apt to gripe, and hence belladonna or hyoseyamus are usually added, as these drugs in some way lessen this unwished-for tendency. With care these vegetable aperients may be gradually reduced while the good effect remains. This is perhaps best marked in the case of cascara sagrada.

Sulphur is much used in chronic constipation, especially in children and in patients suffering from hæmorrhoids. It produces a soft formed stool, without any griping or other objectionable effect. It is contained in the compound liquorice powder, and the official lozenges, each containing 5 grains, are very convenient.

So-called dinner pills used to be very largely used and still are with many. They are usually taken before the evening meal. A favorite one is that given by Lauder Brunton, which contains two grains each of compound colocynth pill and compound rhubarb pill with one grain of extract of hyoseyamus. These doses may often be halved. Such a pill may often be taken for many years without the effect lessening. Lauder Brunton mentions one man who had never missed taking it once in forty years!

Where the trouble is chiefly dyschezia, *i.e.*, the fæces arrive normally at the pelvic colon or even the rectum and yet the tension here is not sufficient to produce the desire for defæcation, enemata are valuable. Plain cold water or warm soap and water are usually used, and just sufficient should be employed to set up the reflex act of defæcation. Glycerine injections or suppositories are also a good deal used, but are apt to irritate if employed constantly. In children one of the best remedies is the old-fashioned soap suppository.

In these cases where there is a want of tone in the bowel strychnine is a valuable component part of any remedy. It is not directly a laxative, but by toning up the bowel and thus permitting of the more easy production of tension by its contents, it leads to this result. Agar agar has been much advo-

cated lately. It is Japanese isinglass obtained from sea weed, and when given in powdered form swells up and thus enlarges the stools. It is occasionally useful in those cases where the stools are small and hard. None of it is absorbed. It must be given in doses of about an ounce a day and appears to have a very limited value.

Spasmodic constipation. Either as a result of a fissure or other painful lesion, or from much purging, and again as a purely nervous phenomenon, the bowel tends to be thrown into spasm in part of its course. Such spasm leads to constipation. These patients are made worse by purgatives which merely produce severe griping without result. Here belladonna is perhaps the most valuable drug, owing to its antispasmodic action. One has seen even opium bring about a free movement of the bowels in such a case set up by over-purging.

No mention has been made of the most common purgatives, viz., castor oil and calomel, as these are rather adapted for occasional than for habitual constipation. Nor has any mention seemed necessary of operative treatment for chronic constipation, although in rare cases where the condition is due to some mechanical lesion, such may be required.

The subject of the therapy of chronic constipation is a very large one, and, if fully entered into, would take as many hours as there are minutes at our disposal, but these few outlines may perhaps be sufficient to introduce the matter for discussion.

THE PSYCHOLOGICAL ASPECT OF DERMATITIS FACTITIA*

BY D. KING SMITH, M.B., TORONTO,
Demonstrator in Dermatology, University of Toronto.

The cases which have caused the most interest and discussion as to whether the lesions are self-inflicted or not are those of the so-called hysterical gangrene.

Even to-day there is a great difference of opinion as to the production of these lesions. Such an authority as Dushing still maintains that the lesions may sometimes be the result of some tropho-neurotic change. In support of this view some interesting experiments have been performed in France. Patients, in the hypnotic state, developed lesions under the suggestion of the experimenter that he was making certain applications to their skin.

The majority of observers, however, believe that the patients should be regarded as responsible for their lesions until they are proven innocent. No certain rule can be laid down regarding them, each case has to be judged on its own merits.

The large majority of the cases are found in women, and in many of them conditions leading to hysteria can be ascertained on careful examination.

It is of great importance that we should realize that hysteria is no longer considered as a physiological condition. Professor Janet says that "The psychological conception of hysteria has the mastery to-day over the physiological conception." Therefore we cannot accept an explanation of the occurrence of multiple gangrene of the skin which is based upon the physiological conception of hysteria. The analysis of many cases has already shown us the almost universal occurrence of hysteria in connection with multiple gangrene of the skin: We know also that the two great symptoms of hysteria are somnambulism and suggestion. If, therefore, we accept the psychological conception of hysteria, a complete and rational theory of multiple gangrene would be that the patient, while in the psychological condition known as somnambulism, has produced the eruption by artificial means in response to suggestion. Only such a theory as this can explain the limitation of these cases to hysterical patients. It reconciles the apparently divergent theories, and explains the similarity of the

* Read at the meeting of the Ontario Medical Association, Niagara Falls, May, 1911.

eruptions in cases of unknown origin to those of known artificial origin. Further, it does away with all need for a motive and with the incredulity which cannot believe self-mutilation possible.

Somnambulism may be defined as that hysterical state in which an idea or a feeling takes on an exaggerated growth, which the patient is powerless to check. Because of this unchecked growth, outside the control of the will, that one idea acquires such importance that it finally completely dominates the patient. This is known as somnambulism. During this period of the somnambulistic state all functions are suppressed except those directly concerned in the dominating idea. Although the other functions still exist, they are beyond the control of the patient's will. The dominating idea disassociates itself from them and develops outside the patient's consciousness and control.

The idea, which in this state of somnambulism assumes such an exaggerated growth, may arise from suggestion from without or from within.

After a time the somnambulistic state disappears, gradually or abruptly, but the patient has no memory of the somnambulistic period, and often cannot remember the idea which has recently dominated his whole personality. It is also characteristic of hysteria that in the same way in which an idea takes on an exaggerated growth there may develop beyond the patient's control various sensory disturbances, such as anæsthesia, hyperæsthesia, paralysis, etc.

We have already emphasized the fact that the cases of multiple gangrene of the skin usually occur in hysterical patients. If, therefore, we view their skin affection in the light of this brief resume of the chief symptoms of hysteria, their etiology is clear and simple. The process may be summarized in this way: A hysterical woman, at some time or other, either wounds herself or sees a wound in another person. After an interval which may be long or short, she enters into the somnambulistic state. The wound acts as a suggestion to her. In her somnambulistic condition she is powerless to prevent that suggestion of a wound from attaining an exaggerated importance. It continues to develop until it dominates her whole personality. She is entirely unable to control either the idea or its power of disassociation. Control of the sensory functions is lost and anæsthesia follows.

Finally she yields to the suggestion of the wound and produces a similar lesion by any means at hand. She suffers no discomfort, as, in addition to the somnambulism, the part wounded is anæsthetic. She then gradually emerges from the

somnambulistic state and views the wound with astonishment. As she has no memory of the somnambulistic period or of the production of the wound, she honestly believes that the wound came of itself. Thereafter, as long as the condition of hysteria remains, any suggestion, even if remote, will reproduce the same conditions and a fresh lesion is made. The recurrences cease only with the cure of hysteria.

If this theory is correct, the initial suggestion may arise from a wound, or a tropho-neurotic process, or a neuritis, or from any other cause. The succeeding eruptions, however, are not the result of the initial nor of the hysteria itself, but of an unconscious yielding to an idea of exaggerated growth which forces the patient to self-mutilation, outside her memory and her will.

22 Wellesley St.

A CASE OF COMPLETE DOUBLE ANIDIRIDIA

BY G. STERLING RYERSON, M.D., C.M., L.R.C.S.E.,
F.R.A.S., LOND.

Professor of Ophthalmology and Otology, University of Toronto.

The following rare case presented itself at my office June 24th:

J. R., aged 14, English. He has never been able to see properly, but can with some difficulty read No. 8 Snellen. An examination showed complete congenital absence of both irides. The lens in both eyes had undergone spontaneous absorption, the capsules remaining as thin crumpled membranes much folded and twisted and dotted with cretaceous deposits.

He has also horizontal nystagmus. In the vitreous there appeared some floating opacities. The optic nerve was partially atrophic in both eyes. Vision was not improved by glasses, owing to the membranous capsule. He refused to have the capsule needled, as he was afraid of losing what vision he now possesses.

Selected Articles.

A CLINICAL LECTURE ON DYSPHAGIA

BY ANDREW WYLIE, M.D.,

Surgeon to the Central Throat and Ear Hospital.

Dysphagia (difficulty in swallowing) is a symptom of many diseases and disorders of the mouth, pharynx, respiratory passages and œsophagus. It may be only very slight and transitory, or it may be very severe and permanent. * * *

CAUSES OF DYSPHAGIA.

These may be central or peripheral: the central causes may be divided into three classes:—(1) Those of a toxic nature, as strychnine poisoning. (2) Those arising from lesions involving the grey matter, as disseminated sclerosis, hæmorrhage. (3) Intra-cranial growths. The more familiar causes of dysphagia, both slight and severe, which are to be met with in everyday practice include:—Any affection of the teeth or gums, such as an alveolar abscess, a common toothache or spongy gums. An inflammation of the tongue (glossitis): a partial loss of taste on one side due to the Vidian nerve being affected by caries of the mastoid: an ulceration of the tongue due to a sharp tooth or to some malignant growth. Tubercular and specific ulcerations do not, as a rule, cause much discomfort at first, but later in the course of the diseases the odynphagia is prominent. (a) (3) A swelling or ulceration of the floor of the mouth such as carcinoma: a swelling or growth on the hard palate, a growth on the soft palate, a cyst of the thyro-lingual duct, especially if it contain a hard calculus: any paralysis of the muscles of the cheek affects the act of swallowing. (4) A simple inflammatory condition of one or both tonsils or even of the posterior wall of the pharynx gives rise to extreme pain and discomfort, far in excess of what one would imagine to be the case, considering the cause and appearance. Varicose veins in the pharynx and severe inflammations, such as tonsillitis, or, worse still, a peritonsillar abscess, cause extreme difficulty. Sub-lingual inflammation is a frequent cause and is not easy to diagnose: there is nothing to be seen, yet the application of the spatula to the base of the tongue is so painful that attention will be drawn to that

quarter. Any growth or swelling of the pharyngeal wall, such as a large post-pharyngeal abscess: this is found chiefly in children, but occasionally in young adults. A prominent atlas has been described as the cause of dysphagia. Malignant and sarcomatous growths in this region all interfere with the act of swallowing. Any paralysis of the muscles of the soft palate, due to diphtheria, or even a gumma producing heaviness of that part. (5) Syphilitic disease in any of these regions does not, as a rule, cause pain in swallowing, but the adhesions and contractions when syphilitic ulcerations and gummata are healing or have healed interfere with the act of deglutition. (6) Laryngeal phthisis attacking the epiglottis, the cartilage of the larynx and the arytenoid cartilages is one of the chief sources of pain in swallowing: there is no great difficulty in deglutition, but the pain is so acute and terrible that patients will not attempt to swallow. In those suffering from phthisis this symptom is often the beginning of the end. It is a most serious condition; emaciation rapidly ensues, with extreme debility and prostration. It is well known that sufferers from phthisis may live many years, or, under proper hygienic conditions and treatment, be temporarily or permanently cured: but it is found that cases rarely survive many months which have become the subject of dysphagia, and death is hastened by starvation. (7) Stricture of the œsophagus is a common cause: it may be merely a functional disorder which can be readily cured, but in many cases the difficulty is due to some cicatricial contraction caused by an old gumma or syphilitic ulcer: or an ulcer or cicatrix caused by a corrosive poison. The most common cause is malignant disease, but occasionally a stricture is caused by such a simple factor as an aneurysm. (8) Certain forms of paralysis, as bulbar paralysis, post-diphtheritic paralysis and the late stages of progressive muscular atrophy affect the muscular fibres involved in the œsophagus and interfere with swallowing. An absolute want of tone in the muscles of deglutition, due to general loss of vitality, noted often in patients before death, especially after a long illness, causes dysphagia. (9) Malignant disease of the liver involving the cardiac end of the stomach affects the power of swallowing. (10) A cause not to be overlooked is a broken or dislocated jaw. (11) Foreign bodies, such as shells, plum stones, artificial teeth, occasionally find their way into the larynx or œsophagus and cause dysphagia. (12) A form of dysphagia due to hysteria is quite common.

DIAGNOSIS.

The diagnosis of dysphagia is not so simple as one might expect and it is important to find the cause in each case, as upon

this the treatment depends. The first thing is to mark whether there be any disease of the buccal cavity to cause it: if not, the pharynx and larynx should be examined, noting any ulceration or swelling of the epiglottis or arytenoid cartilages and any sign of phthisis, syphilitic or malignant diseases. The œsophagus must be examined, but before doing so great care should be taken to make sure that no aneurysm is present, as considerable damage may be inflicted by the passage of a bougie or œsophageal instrument. A bougie will, in many cases, indicate the situation and extent of the obstruction. The œsophagus extends from the sixth cervical vertebra to the tenth or eleventh dorsal vertebra. The cricoid cartilage is the external point to be taken for guidance as to its commencement, and the distance from the incisor teeth to the commencement is five to six inches. The œsophagus itself is nine to ten inches long and may be divided, for the purposes of examination, into three parts:—(1) Cervical, from the cricoid cartilage to the manubrium sterni, $1\frac{1}{2}$ to 2 inches long. (2) From the manubrium to the aperture of the diaphragm is 7 inches in length. (3) The abdominal part is estimated at about 1 inch. Thus, if the bougie can only be passed 6 to 8 inches the obstruction is at the commencement, but if the bougie becomes blocked at 14 or 15 inches the obstruction is at the cardiac end of the stomach.

Laryngologists have, within the last few years, made great advances in the diagnosis of such conditions by means of direct œsophagoscopy and laryngoscopy, the former so ably introduced by Killian and perfected by means of ingenious instruments, such as Brunning's. By the careful use of this instrument the surgeon is able to see the actual growth, ulceration, cicatrix or foreign body, and can form an opinion as to prognosis and treatment. Science has also, within the last few years, introduced X-ray photography, which is invaluable in cases of obstruction, especially if the presence of a foreign body is suspected. Foreign bodies have been known to remain embedded in the larynx for many years without causing excessive discomfort, the position being most difficult to define: but with a photograph taken to reveal the exact spot and by means of direct laryngoscopy their removal becomes an everyday occurrence.

PROGNOSIS OF DYSPHAGIA.

The outlook is grave in all cases of malignant disease, and in laryngeal phthisis: but in most of the other forms of dysphagia, under appropriate treatment, this symptom is generally relieved and cured.

TREATMENT.

In many instances this is simple after the case has been diagnosed and the cause ascertained, for the removal of the source of the trouble relieves or cures the dysphagia. For example, if it is caused by a central origin, such as a toxic agent, this must be suppressed at once and antidotes prescribed: if due to cerebral lesions, causing paralysis, usually of a specific origin, potassium iodide and mercurial inunctions will relieve it. Slight dysphagia caused by local affections, such as carious teeth, an alveolar abscess, etc., or affections of the tongue due to local irritation, is relieved directly by the surgical method of removing the offending part. Growths, tumors, abscesses, on the palate, pharynx or tongue, must also be treated surgically. Ulcerations of these parts due to specific disease are best treated by local astringent, mercurial washes, with potassium iodide and mercury administered internally, or the latter given hypodermically. Glossitis due to gastric irritation may be cured by attention to diet and the use of dyspeptic remedies with the local application of borax and glycerine to the tongue. Tubercular ulcerations of the tongue or pharynx are treated with local applications of chloride of zinc, etc. Tonsillitis in its various degrees and stages is treated by sodium salicylic and local astringents, but when pus is present and a peritonsillar abscess is the result the only treatment is a thorough opening of the abscess. The same treatment applies to sublingual inflammations and abscesses. A local paralysis of the soft palate due to a gumma should be recognized early and treated with anti-syphilitic remedies before it breaks down. The treatment of dysphagia due to laryngeal phthisis is not so simple: it requires careful attention: to obtain relief is what must be aimed at so as to allow the patient to partake of food and prevent the loss of weight and vigor. Patients so afflicted will find that by lying on a sofa, with the head hanging over the end of it, liquid food can be sucked through a tube with a certain degree of freedom from pain. If the epiglottis is swollen and ulcerated great relief can be given by its excision, either wholly or in part, by means of epiglottis forceps. A most efficient remedy is for the patient to inspire some powder of orthoform before each meal: this may be very easily done by means of Leduc's tube. A method which has been found beneficial is to inject a little alcohol with eucaine into the superior laryngeal nerve. A hypodermic syringe with rather a longer needle than usual is employed. The larynx is pushed over towards the affected side and, on a painful spot being ascertained

between the thyroid and the hyoid bone, the skin and cellular tissue is pierced by the needle which is inserted about $1\frac{1}{2}$ cm. and the solution which Purves Stewart recommends is hydrochlorate of eucaine 2 grs. in an oz. of 80 per cent. alcohol. This is slowly injected until the patient complains of pain in the ear. By this method the dysphagia is relieved for a considerable time. Of course in all these affections of the mouth or larynx the less work (such as mastication and speaking) performed the more quickly relief will ensue. Dysphagia due to œsophageal disease is very serious if the disease is malignant, and if the dysphagia be due to adhesions and cicatrices from corrosive poisons bougies will have to be passed for months and even years to obviate any contraction and narrowing. If due to specific disease or ulceration the usual remedies, with judicious dilatation, will cure the patient.

Foreign bodies in the larynx or œsophagus can be easily removed, their exact locality being diagnosed by an X-ray photograph, Brunning's œsophageal tube is inserted and the body is caught by long forceps and slowly extracted. Whole sets of artificial teeth, pieces of bone and other bodies have been removed by these means. Hysterical dysphagia is often a most distressing condition to cure, and patients become thin and emaciated before the symptom is relieved: to cure this form of dysphagia a galvanic current is efficacious.

The treatment therefore depends solely upon the cause of the dysphagia and whether that cause can be removed, relieved or cured.—*The Medical Press.*

Progress of Medical Science.

MEDICINE.

IN CHARGE OF W. H. B. AIKINS, F. A. CLARKSON,
BREFNEY O'REILLY AND F. C. HARRISON.

Blood Finds in Röntgenologists

Von Jazic (*Berl. Klin. Woch.*) and two others representing Prof. Van Noorden have studied the blood of ten men who have used X-rays continuously for years. No less than three cases are on record in which röntgenologists have died of lymphatic leukaemia, and this can hardly be accounted for by coincidence. There is also a similar case of a chemist who worked with radium. The blood counts do not reveal anything startling, but the average leucocyte count is somewhat lower than normal. The number of lymphocytes is considerably above the average, while that of the polymorphous neutrophiles is correspondingly lower. Most striking of all the changes is the small number of acidophiles, which were totally wanting in several cases. Erythrocytes and large mononuclear leucocytes showed no typical changes. The relationship of the blood picture to that of lymphatic leukaemia is of course obscure.—*Medical Record*.

Gross's Duodenal Tube

Gross (*Boston Medical and Surgical Journal*) describes his duodenal tube which he demonstrated for the first time in May, 1909, and which, he says, was a logical development of his duodenal bucket. Gross says that after some experience the introduction of the duodenal tube is an easy matter. In the main, his duodenal tube is simply a direct prolongation of the stomach tube. The method of introducing the tube enables us, to a great extent, to exclude the function of the stomach during the entire procedure, reaching the pylorus over the shortest route and in the shortest time. The principle of non-interference with the gastric function is still more pronounced in cases where the stomach is displaced or dilated. In many cases the duodenum may be reached in half an hour or less, and there are even cases

in which the small heavy ball practically drops right into the open pylorus. As a matter of course, it is necessary to see to it from the start that there is a "free" outflow, meaning that the duodenal contents will flow almost uninterruptedly into the lower lying receptacle. This is effected, if measures to that effect be necessary, by occasional aspiration. The technique is given as follows: The patient swallows the tube, which is weighted with a small perforated silver ball, and assumes the right recumbent position. This tends to gravitate the small ball toward the pylorus, drawing the tube with it. When it has arrived there, the further propulsion of the ball may be left to the mechanism of the pyloric part of the stomach. It is only by the aid of the "duodenal tube" that the desirable elucidation on the function of this section of the digestive tract can be obtained.—elucidation especially on the external secretion of the pancreas, all previous knowledge on this point having been gained by animal experiment, that is, on wounded and, therefore, pathological animals. The chemical examination of the duodenal contents, obtained from thirty patients, yielded the following results: 1. average quantity obtained, 32 c.c.; 2, average consistency, viscous; 3, average transparency, transparent; 4, average color, light green; 5, average reaction on litmus, strongly alkaline, on phenolphthalein, always acid; 6, average specific gravity, 1.006; 7, average quantity of mucine, 6.7 per cent. volume; 8, amylase and steapsin, the starch and fat splitting ferments, were never entirely absent in fresh duodenal juice; 9, the average values for trypsin were between distinct and weak, and were totally absent only in two cases. Gross concludes that having thus established average values, it will be possible to determine deviations in future examinations.—*New York Medical Journal*.

Differential Diagnosis of Intercostal Neuralgia and Pleurisy Without Effusion

Schepelmann (*Berl. klin. Woch.*) says that when the trunk is bent over to the side the seat of the pain, the pain increases in case of intercostal neuralgia, while with pleurisy the pain increases when the trunk is bent over to the sound side. He explains the mechanism of this but warns that sometimes both the pleura and the nerve are inflamed, in which case nothing is to be learned from this sign. Muscular disturbances may be differentiated by the painfulness of any and all movements of the trunk and arms and possibly by the tenderness of the muscles involved,

the frequent change in the localization of pain and the improvement under application of the induced electric current.—*Journal American Medical Association.*

Salicylates and Alkalies

About six years ago Dr. Frey showed by experiments on animals, and also on himself, that albuminuria and casts, as a result of the administration of salicylates, did not occur except when the urine was acid. It appeared, therefore, from these observations that the renal irritation was not due to a general intoxication by the salicylates, but was a purely local effect caused by the salicylate set free in an acid urine. Dr. Ehrmann has contested this view, as he has found that in dogs administration of considerable doses of bicarbonate of soda, sufficient to diminish the acidity of the urine, frequently caused albuminuria, without the intervention of salicylic acid. Dr. Glässgen has recently investigated the subject anew by observations on patients in the Strassburg clinic. In the first place he finds that the continuous use of salicylic preparations does undoubtedly give rise to albuminuria. Further, according to his observations, the administration of 10 grammes per day of sodium bicarbonate causes the complete disappearance of this albuminuria, which, however, returns as soon as the alkaline medication is omitted. As a general rule, Dr. Glässgen gives twice as much alkali as salicylates, but does not exceed 10 grammes a day. According to his experience, 6 to 10 grammes of bicarbonate of soda produce no undesirable symptoms and do not in any way diminish the therapeutic effects of the salicylates. They are especially indicated as a prophylactic measure in cases where the kidneys are already affected.—*The Hospital.*

Cardiac Rhythm and Cheyne-Stokes Breathing

Louis Gallavardin (*Arch. des mal. du coeur, des vaisseaux et du sang*) points out that although in most cases of Cheyne-Stokes breathing the pulse-rate is slower during the apnoeic period, yet this rule is not an absolute one, as cases have been reported in which the exact reverse occurred. The author has reported a case of the latter kind. This was a patient suffering from sub-acute nephritis, in whom during the apnoeic period the pulse quickened and during the hyperpnoeic period slowed; this oc-

curred especially after the patient had taken digitalis. During the apnoeic period the pulse was rapid, dicrotic, and of low tension; at the appearance of the first inspiration the pulse-frequency at once diminished and the pulsations became strong. The author believes that this hyperpnoeic slowing of the pulse corresponds really to an auricular tachycardia, but that this auricular tachycardia is masked owing to the fact that only half the number of ventricular beats which the auricular tachycardia should give rise to are transmitted to the pulse. In the author's case he found that during the hyperpnoeic period the number of pulsations was always half of a number which was greater than the number of pulsations during the apnoeic period; for instance, he noted that during the hyperpnoeic period the pulse-rate was 80, and during the apnoeic period 140 beats per minute. Whether this halving of the ventricular beats was due to a ventricular bradycardia, such as may occur after the administration of digitalis, or to a pseudo-bradycardia with coupled rhythm, the author was unable to decide, owing to the fact that on account of the violence of the respiratory movements at the hyperpnoeic period auscultation of the heart could not be carried out. The author concludes as follows: (1) Hyperpnoeic bradysphygmia may occur in certain subjects, and perhaps under the influence of digitalis may replace the apnoeic bradycardia commonly found during Cheyne-Stokes breathing. (2) This hyperpnoeic bradysphygmia corresponds probably to a hyperpnoeic auricular tachycardia, but is masked by the fact that only half of the ventricular beats which the auricular tachycardia should give rise to are transmitted to the pulse. (3) The hyperpnoeic phase of Cheyne-Stokes breathing may, by stimulation of the vagus or by acceleration of the auricular beats, constitute a condition which predisposes to the appearance of the coupled digitalis rhythm.—*British Medical Journal*.

The Blood in Diseases of the Thyroid Gland

According to the researches of Kocher, Zappert, Cinffini and Caro, there exists in the disease of Flaiani-Basedow, a characteristic change in the blood, important from the diagnostic and prognostic point of view—a leucopæmia and diminution of the polynuclear leucocytes, with relative and absolute lymphocytosis.

Carpi is not able to agree with these conclusions, because he has found the same changes (leucopæmia with lymphocytosis) in simple struma without hyperthyroidism. After the publication

of Carpi's first article, in 1908, many other authorities have discussed the subject. Some of these, as Cinffini, Roth and Butler, confirm the diagnostic importance of the blood change noted by Kocher. Recently others, comparing cases of simple struma and Basedow's disease, have come to the same conclusions as Carpi. (Max, Hoppis, Morone, Düller.)

Carpi's statements are as follows:

1. Leucopæmia is not a constant symptom of Basedow's disease. (In a typical case, seen by him recently in Pavia, he counted between 5,000 and 8,000 leucocytes per cub. cent.)
2. Lymphocytosis is one of the most constant symptoms of Basedow's disease.
3. In myxœdema Beuce and Engel have observed a typical lymphocytosis with lymphoid metaplasia of the bone marrow.
4. In simple struma without thyreotoxic phenomena, Carpi, Morone and Müller have observed lymphocytosis reaching a high degree.

From these considerations, Carpi affirms that there does not exist in Basedow's disease a constant blood change, to which one can attribute diagnostic importance. Lymphocytosis (with or without leucopæmia) is found in various morbid conditions that are characterized by an anatomical or functional change in the thyroid.—Translated from *Giornale Internaz. delle Scienze Mediche* by Harley Smith.

Normal Human Serum in the Treatment of Haemophilia in the New Born

Welsh claims that animal serum produces in man a certain number of symptoms, fever, eruptions, joint pains, albuminuria. The injection of antitoxin has been followed by death in certain cases. This toxic action, according to Rosenau and Anderson, is due to a substance found in the normal serum of the horse, and it is completely independent of the antiseptic property of the serum. Welsh, in twelve cases of hæmophilia of infants, has used human serum with happy results. The hæmorrhage ceased; the effusions of blood were rapidly absorbed, and the babies gained in weight. The dose varied from 30 to 60 c.c., 10 c.c. at a time. Does the human serum act as a bactericide or as a coagulating agent? Welsh offers no opinion on this point. In a case of streptococæmia, he obtained a cure by the use of human serum. He also extols it as a therapeutic agent in tuberculosis.—Translated by H. S.

OBSTETRICS AND GYNAECOLOGY

IN CHARGE OF ADAM H. WRIGHT, K. C. M'ILWRAITH, FRED. FENTON
AND HELEN MACMURCHY.

Pituitary Extract in Uterine Atony. J. HOFBAUER (*Zentralbl. f. Gyn.*, Jan. 28, p. 137).

In 1909 Dale published a number of experiments on animals, which showed that decoction of the pituitary body caused the unstriated muscular fibres of certain organs to contract. The action was a direct stimulation of involuntary muscle without relation to innervation, and was most pronounced on the uterus. The writer has used "puitritrin" in uterine atony with marked success.

Case 1.—A secundipara was admitted with hydramnion. There were no foetal sounds or movements. The liquor amnii escaped when the os was of the size of a crown piece. There had been no labor pains and none occurred during the first three hours after admission. A movable foetal part could be felt above the pelvic inlet, but the presentation, owing to maceration, could not be determined. Two short pains then occurred at an interval of 20 minutes, and then 4 at intervals of 5 minutes. Then, after 2 pains had occurred with 20 minutes' interval, they practically entirely ceased during two hours. Consequently 0.6 gm. of puitritrin was injected hypodermically in the forearm. Five minutes later powerful pains began and recurred every half to two minutes. Ten minutes after the injection the bladder, which extended to within three fingerbreadths of the umbilicus, was spontaneously emptied. Earlier in the day catheterism was necessary. A quarter of an hour after the injection the foetus was born with doubled body. Three hours later the placenta was expressed.

The pains produced by puitritrin are regular and in no way tetanic. Thus the clinical results fully confirm the experimental. In several of the writer's cases sudden desire to micturate followed the injection, though this had not been possible for hours previously. He therefore tried the preparation in the retention of urine of the puerperium. In one case, after 26 hours retention, spontaneous micturition occurred five minutes after an injection. In another case after sixteen hours' retention an injection of puitritrin was given. There was immediate desire to micturate, but micturition did not occur till three hours later.

The best dosage requires working out. Pituitrin has the great advantage over ergot of not producing tetanic contractions. Further experience will show whether the somewhat stormy onset of pains may place the life of the child in jeopardy from asphyxia. For gynæcological—as opposed to obstetrical—purposes, pituitrin appears to be of little value. No sign of poisoning or local reaction at the site of injection was observed.—*Med. Review.*

Superfetation

A note of a case of superfetation by Dr. A. E. Turnbull was communicated by the Secretary. The patient was a primipara, 24 years old, and her pregnancy was supposed to have reached six and a half months when labor set in. She was delivered of twins, there being one placenta and hydramnios of the second sac. Then a third ovum, apparently 3 months old, was expelled. Dr. Hart said this was not proved to be a case of superfetation. In multiple pregnancy the difference in the size of the embryos might be great, according to the placental area that each obtained. Dr. B. P. Watson thought that in this instance two ova had been fertilized, one giving rise to twins and the other to a single embryo, which had died at the third month, and had retained its freshness while it lay in the uterus.—*Edin. Obst. Soc. B. M. J.*

Milk of Eclamptic Mothers

De Bovis does not doubt that the eclamptic poison can enter the maternal milk, but if care is taken not to allow the baby to nurse at the mother's breast during the first week, especially if convulsions have taken place after birth, there will be no danger of poisoning to the child. If the child is hurried to the breast, however, the danger is grave. It is well known that infants born of mothers who have already had convulsions are not usually long lived.—*N. Y. Med. Jour.*

The Management of Pregnancy

Rudaux considers that as soon as the practitioner has diagnosed pregnancy the patient should be carefully advised as to her mode of life and the necessity of showing her to her doctor at regular intervals, about once a month if no abnormal symp-

toms arise. At each visit one should ascertain the shape, consistency and development of the uterus, the conditions of the veins and subcutaneous cellular tissues, the action of the bowels, and the amount of urine passed in twenty-four hours, and the presence of albumen, if any. In primiparæ, during the eighth month it is important to examine the patient and diagnose the presentation; this precaution may be left till the ninth month in the case of multiparæ. In primiparæ the fœtus should engage or be fixed in the pelvis by the eighth month; if this is not the case, and the presentation is a normal one, the pelvis must be carefully examined for contraction or anything which might cause dystocia, such as rachitism, spinal curvature, or lameness. Vicious presentations are most readily transformed into normal ones at this time. In multiparæ fixation is more tardy, and may not occur until a few days before labor or until labor has begun. It is necessary to be sure that the presentation is cephalic, and that it has no tendency to sink into one or the other of the iliac fossae. The more pregnancies a woman has had the more she is liable to malpresentations, for the frequent distension of the abdominal tissues has lessened the tonicity and elasticity of the abdominal wall and the uterine muscle.—*La Clinique*.

Puerperal Fever

Schottmüller says that in his former researches he found the agent of puerperal fever to be the hæmolytic streptococcus erysipelatosus, but that his more recent studies have convinced him that the anærobic streptococcus putridus is an even more important agent. In comparison with these two kinds of bacteria the staphylococcus aureus, the bacterium coli, and the bacterium phlegmones emphysematosæ are of much less importance.—*Mün. Med. Wochen*.

Use of the X-Rays in the Diagnosis of Pregnancy

Edling says that at the beginning of the third month of pregnancy, and sometimes before, it is possible to obtain X-ray pictures of the fœtus that are perfectly satisfactory for the purpose of diagnosis. In the later months pregnancy can be diagnosed without difficulty. The diagnosis of multiple pregnancy can be made thus in the first half of pregnancy, and abnormal positions, as well as probably hydrocephalus and certain malformations can be made out. Extrauterine pregnancies give as

good pictures of the fetus as the normal, but the differential diagnosis depends chiefly on its asymmetrical position in the pelvis of the mother.—*Mün. Med. Wochen.*

Use of Corpora Lutea for Symptoms of Artificial Menopause

C. A. Hill has used extract of corpora lutea in doses of 5 grains three times a day in twelve patients from twenty-five to thirty-eight years of age from whom he had removed both ovaries and who showed very severe nervous symptoms. The nervous symptoms were completely relieved in every case. In only two cases was there complete relief from flashes of heat, in another case suffering from insomnia which started after her operation over a year before and had continued ever since, and upon whom hypnotics gave no results, complete relief was experienced after using fifty capsules, each containing 5 grains. One case reported a notable increase in sexual desire, while in the remaining eleven no noticeable change was experienced.—*Surg., Gyn. and Obst.*

OPHTHALMOLOGY AND OTOTOLOGY

IN CHARGE OF J. T. DUNCAN.

Pupillary Reaction in Health and Disease

In the *Virginia Medical Semi-Monthly* is an address on the above subject, which, even in abstracted form, is suggestive.

In studying the reaction of the pupil in disease, it will be necessary for us first to have clearly in mind its reaction in health. We must remember that the pupil is merely an opening which is constantly changing size, in accordance, first, with the intensity of the light present; second, with the amount of accommodation being exerted; and, third, the convergence being used. Another thing to remember is that the action of the pupil is under the control of two separate nervous systems, namely, a branch of the third cranial nerve (motor oculi) and a branch from the sympathetic system. The former goes to the sphincter of the iris (its stimulation causes the pupil to become smaller), the latter goes to the radiating fibres of the iris (its stimulation dilates the pupil).

Again, it is necessary for us to keep in mind the consensual reaction of the two pupils in health, remembering that a ray of light entering, say the right eye from the right-hand side, falls on the nasal side of this eye, and on the temporal side of the left eye, and yet the reaction in the two eyes is exactly equal.

If these things are kept clearly in mind, the pupillary conditions may be of much help in diagnosis and prognosis. For instance, if both pupils are contracted, we begin to think of some disease that would irritate or inflame the oculi motor nerves, such as the early stages of meningitis, encephalitis, an apoplexy of the pons, early stages of epilepsy, locomotor ataxia, uræmia, retinitis (of both eyes), opium or alcoholic poison, the use of myotics, etc.

On the other hand, if we have both eyes unevenly dilated, we would think of a condition that would interfere with the functions of the motor oculi, or else stimulate the sympathetic; and we look for intra-cranial tumors, effusions along the tract of such nerves, the premonitory symptoms of locomotor ataxia, late stages of epilepsy (the pupil being dilated following the attack), paralysis involving both third nerves, amaurosis, acute uremia, melancholia, double glaucoma, acute inflammation of the sympathetic, or of the cervical cord, the use of mydriatics, atrophy of the optic

nerve—in fact, any disease causing high pressure in the cranium.

Also, we must not forget the dilated pupil caused by intestinal parasites.

The Argyll-Robertson pupil is one in which the reaction to light is lost, and the reaction to accommodation and convergence remains. This, we are told, is found in 80 per cent. of locomotor ataxia, and may usually be elicited in its early stages, thus helping us to an early recognition of this disease. The pupils in these cases are usually slightly contracted, and the effect in one eye nearly always precedes the other.

Still another condition in which the pupillary reaction is of great service to us is during the administration of an anæsthetic, and a close watch of the pupils will often warn us of impending danger. During the administration of chloroform we usually have a slight dilatation of the pupil during the first stages of the anæsthesia, which gradually contracts as the second stage begins, and this is continued through the third stage unless a very profound and dangerous stage is reached, when it is in turn followed by a second dilatation. A sudden full and complete dilatation of the pupil following the third stage of chloroform anæsthesia is a danger signal not to be overlooked or disregarded.

Treatment of Corneal Ulcer

Hunter McGuire lays stress upon constitutional treatment in these cases, advising a brisk calomel purgative as soon as the diagnosis is made. This to be followed by liberal doses of quinine, combined with iron and strychnia. Locally, if the ulcer be an ordinary benign one, he uses a weak solution of atropine and boracic acid, the daily application of yellow oxide of mercury ointment, with hot compresses. In the more serious cases he uses a strong solution of atropine (gr. iv. to the ounce) combined (if there be pain) with 5 per cent. solution of dionin. As a local application McGuire prefers pure carbolic acid. The acid should, of course, be very carefully applied, and in most instances preceded by a cautious curettage of the ulcer. To facilitate the application, the eye should be thoroughly cocainized and then, by means of a finely pointed wooden toothpick, about the tip of which fibres of absorbent cotton have been wound, the acid is applied by a gentle rubbing movement. After allowing the acid to remain in contact with the ulcer for a few moments, the lids being in the meanwhile held apart, the conjunctival sac is thoroughly flushed with either salt solution or saturated boric acid

solution. The application may be repeated in twenty-four hours if conditions have not improved. Failing the carbolic acid, the actual cautery is used.

The Treatment of Deafness in Persons Who Hear Best in a Noise (Paracusis)

In an address on this subject delivered before the West Kent Medico-Chirurgical Society, C. J. Heath propounds some original ideas. Briefly, he holds that this form of deafness is due to relaxation of the membrana tympani, and not to stiffening of the ossicular joints (as taught by Politzer). Acting on this new conception, Heath opposes anything that tends to relax the membranes, *e.g.*, blowing of the nose forcibly while holding it tightly in the handkerchief, the use of the Politzer bag, &c. He endeavors to tighten the drums by proper painting of them with the fluid he describes, or, in some cases, by operation.

SURGERY

IN CHARGE OF E. E. KING, G. A. BINGHAM AND
C. B. SHUTTLEWORTH.

Hand Disinfection: Where are we At?

To the superficial observer nothing looks easier than disinfection of the skin. It seems a simple matter to remove the ever-present bacteria by mechanical means or destroy them by antiseptic solutions. Unfortunately, bacteria have a habit of penetrating beyond the superficial cutaneous layers and of wandering into the hair follicles, sebaceous and sweat glands, and there bidding defiance to the most powerful antiseptic and the most thorough scrubbing. Despairing of their efforts to successfully attack them, some investigators have advocated the policy of bottling up the deep-seated germs, so to speak, as by the use of agents that will contract the skin, such as alcohol, acetone, or tannic acid. Another way of preventing infection from this source is covering the hands with rubber gloves or the like; but, unfortunately, gloves may be torn or punctured during operation, and therefore cannot be regarded as absolute safeguards.

Later came the Grossich method of iodine disinfection of the operative field, and it seemed as if all difficulties had been entirely overcome. The coating of iodine appeared to act as a reliable barrier against the entrance of bacteria from the surrounding skin into the wound surface. But now we are told, on good authority, that even this method, which has become quite popular, falls far short of the requirements.

It is, therefore, quite pertinent to inquire, where are we at?

In the use of the older, elaborate methods, as, for instance, that of Fürbringer, the time required has been a serious obstacle to the busy surgeon. The protection afforded by rubber gloves is uncertain, since, according to Küttner, they are injured in about 50 per cent. of major operations. On the other hand, the simpler means of disinfection with alcohol or iodine are more or less irritating to the skin. In other words, under present conditions we are almost as far as ever from the adoption of a universal method of cutaneous disinfection. It is important, however, that whatever plan be adopted, it should be carried out strictly according to the instructions of its originator, for in this way only is it possible to compare results.

From a study of the literature, it appears that alcohol disinfection of the hands and iodine disinfection of the operative field are the most promising measures as regards simplicity and efficiency that have been suggested in late years for securing the desired end—that is, approximate sterilization of the skin. But it is essential to secure the proper material. The alcohol should be 95 per cent., and the hands should be thoroughly dried before its application. In the use of tincture of iodine all washing of the operative field on the day of operation should be avoided, and in urgent cases it has been suggested that the iodine may be applied without previous cleansing. According to Küttner, irritation may be prevented if a freshly prepared 5 per cent. tincture of iodine be employed and the remains of the coating removed with alcohol or ether after operation.—*International Journal of Surgery*.

Spitting the Bones in Fractures of the Leg

Lambret (*Presse Médicale*) based his method on that of Steinmann, who, in fractures of the thigh, drove a steel rod horizontally through the condyles either with a centrebit or hammer, after rapid disinfection with tincture of iodine and local anæsthesia. The rod transfixes the soft tissues. The rod should be perpendicular to the axis of the bone. The sole danger is infection. Lambret uses two steel nails in fracture of the tibia, one passing through the upper extremity at the level of the upper tuberosity, the other just above the ankle joint, transfixing also the fibula. If the fracture is low down, the lower nail passes through the *os calcis*, and thus prevents the development of a talipes equinus through traction by the *gastrocnemii*. For old fractures with shortening the surgeon gets excellent results, as, by means of suitable apparatus, he is able to lengthen the distance between the nails or spits. The leg is not wrapped in a bandage and may be massaged and the joints exercised and any wounds treated. With care and cleanliness any practitioner may use this method with advantage.—*New York Medical Journal*.

Mobilization of Stiffened Joints

Osgood (*Boston Medical and Surgical Journal*) reports three cases of mobilization of stiffened joints. The mobilization of stiffened joints, he says, is at present receiving some of the surgical attention which the importance of the deformities

merits. His three patients demonstrate the possibility of preventing reunion of bone in cases of complete bony ankylosis. This bony ankylosis had persisted in the first case two years, and in the second case at least five years; in the third case sixteen years. In the cases reported the membrane of Baer, of Johns Hopkins, was used to prevent union. This is a tough membrane obtained from the bladder of the pig, sterilized and chromicized like catgut, and supposed to remain in the body tissues without absorbing for at least thirty days. He has seen it in certain cases still unabsorbed and strong at the end of eleven weeks after insertion. In the seven patients he observed there was a slight rise of temperature, from 100° to 102° F., and then a gradual drop to normal. In his experience there has been in all cases a serous or slightly purulent discharge from some portion of the wound appearing in from three days to four weeks after the operation. In one patient the membrane was removed practically en masse eleven weeks after its insertion. Baer reports many cases where there has been no discharge and attributes the rise of temperature to the chemical action of the large amount of chromic acid in the membrane.—*New York Medical Journal*.

Traumatic Spondylitis

Imbert and Vial (*Presse Médicale*) discuss this rare disease, which may be caused by any shock to the spine, a fall, a blow, or even a muscular effort intended to preserve equilibrium after a fall or a slip. There is great immediate pain, and unconsciousness may supervene; recto-vesical paralysis follows usually. After apparent amelioration, pain again develops in the form of a girdle opposite the vertebræ affected, there is loss of power and sensation below the lesion, with incontinence of urine, constipation, or diarrhoea with loss of faecal control, and the patient is characteristically curved forward with a kyphosis, rarely backward with lordosis. This reappearance of symptoms may be due to too early movement on the part of the patient, with consequent injury to the vertebræ. The disease has to be differentiated from hysterical fancied fractures and Pott's disease. The treatment is mainly to fix and relieve the spine by the dorsal decubitus and a cushion under the loins; a supporting corset should be applied later. An ankylosis forms and the distortion persists. As to the industrial insurance problem, these patients cannot carry heavy loads, but they can walk and do any light work.—*New York Medical Journal*.

Actinomycosis

Some details are given by Schwartz (*Journ. des prat.*) of a case of actinomycosis. The patient was a man of 71 years of age—an agriculturist—who had a swelling of the cheek which had lasted about six weeks. He remembers distinctly when sleeping on the grass feeling a sharp prick on the left cheek, to which at the time he paid little attention. On examination a tumor the size of an almond was found in front and below the lobe of the ear, adherent to the skin but not to the deeper tissues over which it was freely movable. There was no fluctuation, and it was very hard and painful to touch. It was removed under local anæsthesia. A section of the tumor showed a cavity filled with a yellowish purulent material, containing in the centre some yellowish grains, and an ear of corn still green. On microscopic examination the puriform liquid stained by Gram showed abundant clusters of mycelium, resembling in all particulars the filaments of actinomycosis. The absence of the usual club formation may be explained by the fact that the lesion was comparatively young. The vegetable character of the ear of corn found in the tumor was demonstrated microscopically. A section of the tumor exhibited a network of fibrous material containing a muco-colloid substance, in which lay the mycelium. It seemed as if the toxins of the parasite had brought about a sort of dissolution of the sebaceous and sweat glands in its immediate vicinity, and still more deeply had attacked an aberrant lobe of the parotid. The author quotes two cases of Boströms, practically identical with the one described. Extirpation in these early cases appears to be successful. When the lesion is more widespread, large doses of KI may be given.—*British Medical Journal*

LARYNGOLOGY AND RHINOLOGY.

IN CHARGE OF J. PRICE-BROWN.

Abstract from the Proceedings of the Annual Congress of the American Laryngological Association, Philadelphia, May 29th, 30th, 31st, 1911.

Among the many excellent papers presented were two upon the subjects of post-nasal fibromata; the one by Norval Pierce, of Chicago; the other by Bryson Delavan, of New York.

POST-NASAL FIBROMAS AND THEIR SPONTANEOUS DISAPPEARANCE.

In introducing this subject Dr. Pierce dwelt at length upon the exceeding gravity of the disease and the untoward effects which usually have attended operative treatment. Recurrence after operation was almost invariable and the result in the end usually fatal. The hæmorrhage accompanying and following operation was one of the most serious difficulties which the surgeon had to contend with, yet the only hope was complete and radical removal.

The one redeeming feature in reference to these fibromata was the fact that, being a disease of early adult life, it had a natural tendency, after this period was over, to shrink away and disappear.

In support of this idea, he related an instance in his own practice in which this had taken place. It was the case of a young man in whom there was neither suspicion nor indication of the presence of specific disease. To make the diagnosis surer, modern tests were used, the results being negative. The growth was very large, filling both naso-pharynx and nose, and accompanied by the characteristic symptoms of fibroma. Iodide of potassium was administered. The growth gradually shrunk away and disappeared. The doctor did not attribute this result to any specific action of the iodide, but to the spontaneous disappearance of the fibroma as a result of natural causes.

TREATMENT OF POST-NASAL FIBROMATA.

Dr. Delavan, in presenting his paper, expressed very similar views to those of Dr. Pierce in reference to the large mortality which followed the removal of post-pharyngeal fibromata by ordinary surgical methods. But as a very small percentage of

cases ever indicated any tendency toward spontaneous shrinkage, it was not wise to wait for nature to reverse the order of development.

He strongly favored intra-nasal treatment by electrolysis, supplemented by evulsion by means of electro-cautery snare, electro-cautery puncture, etc. The treatment in these cases might be tedious; but the operations were attended by less deformity, and the good results were more lasting.

The fortunate rarity of this disease prevented any rapid accumulation of reports of cases. Hence it was imperative, in order to secure reliable statistics for our guidance, to have each and every case reported as it occurs, giving the entire clinical history, with the method of treatment adopted, as well as the present and ultimate results.

Price-Brown, in discussing the two papers, said that, owing to the favorable results that had followed his treatment of nasal sarcoma by intra-nasal electrical methods, some rhinologists had doubted the correctness of his diagnosis. Granting for the moment that this might be the case, the only other category that they could be placed in would be that of fibromata; and their **successful removal by intra-nasal methods would support the view as advanced by Dr. Delavan.** He would say, however, that his success had been greater with the electro-cautery than with electrolysis; and with the electro-cautery knife than with the electro-cautery snare, owing to the wide sessile attachment which the tumors had always presented.

Dr. J. Solis Cohen read a highly appreciated paper upon

THE PROGRESS IN THE TREATMENT OF LARYNGEAL CARCINOMA
SINCE THE ORGANIZATION OF THIS ASSOCIATION.

He first outlined the many radical operations that had been done during the long period of a third of a century. This, however, was coupled with the lamentable small progress that had been made in the technique of operation, comfort bestowed upon the patient, and permanent benefit to the sufferer. A few brilliant triumphs had been obtained, in which the patient retained the normal power of deglutition, acquired a pharyngeal voice that could be heard, and lived for years, to die of some other disease. But these cases were rare. The large majority of patients operated upon, after temporary recovery, had a brief life of misery and eventually died of a recurrence of the disease.

He believed that on the whole better results followed intra-laryngeal methods than extra-laryngeal methods, particularly when, in addition to the use of the knife, electricity in its various

forms was added to our armamentarium, electrolysis and the electro-cautery snare being particularly advocated.

Price-Brown next read a paper entitled:

A CASE OF SPINDLE-CELL SARCOMA OF THE LARYNX TREATED BY
ELECTRO-CAUTERY AND THE APPLICATION OF RADIUM.

(This paper will appear in full in the next issue of THE PRACTITIONER.)

Prof. Mackenzie, of Johns Hopkins University, in discussing this paper, agreed with the experiences of the writer, in the uselessness of radium in the treatment of intra-laryngeal disease. While the results in cutaneous epitheliomata were in many cases excellent, the deep mucous membranes did not yield in the same way to radium treatment. In some cases it was even worse than useless.

Among many other papers submitted to the Congress there were a series of six upon the tonsil.

The opening paper was the only one which the abstracter had the opportunity of hearing. It was by Henry L. Swain, Professor of Laryngology, of Yale University, upon the subject:

ARE TONSILS A MENACE OR A PROTECTION?

In an exhaustive reading he favored the idea that, while tonsils that were diseased were a menace, yet when normal or simply hypertrophied, they were in large measure a protection, a physiological fact that he believed could be demonstrated. In the development of the child the faucial tonsils are the two central points in the formation of Waldeyer's ring. Whether large or small, they are invariably present, and as lymph-nodes they rank among the most important ones of the body. What is more, they are always connected with the general lymphatic system by lymph vessels which carry the lymph both to and from the tonsil. Although the precise function of the tonsils is still an open question, yet the fact that the eruption of the teeth is synchronous with the development and recession of the tonsils would seem to indicate a co-relation between them, a theory advanced by certain present-day physiologists.

As a pathological fact, Dr. Swain claims that it is still an open question whether the various pathogenic cocci and bacilli, sometimes found in the tonsil, have reached it by afferent or efferent channels. T.B., for instance, may have been carried into the tonsils by the lymphatic vessels direct from the digestive tract, to be destroyed by the phagocytes of the lymph nodes. In support of this idea it is claimed that tuberculosis of the bones

is far more frequent among children in whom the tonsils have been entirely removed, than among those in which they have been simply reduced in size, the tonsillar phagocytic action in the former having been destroyed.

From these and other reasons Dr. Swain believes: that complete tonsillectomy, particularly in children, in a large majority of cases, is a serious mistake, and should not be countenanced; to separate the tonsil from the pillar, and remove a portion of it, so as to reduce the hypertrophied tonsil to something like its normal size and form, being all that is required. For it must be remembered that in early life the enlargement is usually one of simple hypertrophy.

The Enucleation of the Tonsils with the Guillotine

Samuel S. Whilles and Frederic C. Pybes (*The Lancet*, Sept. 17, 1910.)

The writers advocate complete enucleation of the tonsils, and state their ability to accomplish this completely, together with the capsule, by means of the guillotine, in forty-two per cent. of cases. In the remaining cases the entire tonsil, with capsule, being taken away in pieces. The main point in their method of operation being to press the anterior pillar outwards, so as to project the tonsil into the loop of the guillotine. In the description of the tonsil they point out that the orifices of the lacunæ are narrower than the channels themselves, so that there is no readiness of discharge when the lacunæ are filled with pus or caseous material.

Editorials

BRITISH MEDICAL ASSOCIATION

The 79th annual meeting of the greatest of all medical associations in the world was held in Birmingham, July 25-29.

A great deal of interest was taken in the many discussions respecting the importance of Mr. Lloyd George's National Insurance Bill, especially as to its probable effects on the general practitioners of Great Britain. Briefly speaking, the majority of those present were inclined to make the following demands:

(1) An income limit of £2 a week for those entitled to medical benefit. (2) Free choice of doctor by patient, subject to consent of doctor to act. (3) Medical and maternity benefits to be administered by local health committees and not by friendly societies. (4) The method of remuneration of medical practitioners to be according to the preference of the majority of the medical profession in each district. (5) Medical remuneration to be what the profession considers adequate. (6) Adequate medical representation on all the Boards established under the Act.

The next annual meeting will be held during the last week of July, 1912, in Liverpool, under the Presidency of Sir James Barr. The election of Sir James will give much pleasure to his many friends in Canada. We offer our sincere congratulations to Sir James Barr with our very best wishes for the success of his meeting in 1912.

MR. JOSEPH CHAMBERLAIN

One of the most pleasant episodes of the meeting was the election of Mr. Chamberlain as a member of the Association. The following resolution was carried unanimously: "That the Right Honorable Joseph Chamberlain, member of His Majesty's Privy Council, be and is hereby elected an honorary member of the British Medical Association, in recognition of his eminent services in promoting the scientific study of tropical diseases."

The President, Professor Saundby, in presenting the certificate said: "The British Medical Association wished to convey its sense of the respect, affection and esteem felt for their fellow citizen; that Mr. Chamberlain was well known to the people of Birmingham; when he first knew him he was Mayor of the city, but since then he had distinguished the town of Birmingham by becoming one of the most eminent Statesmen of the day; as Colonial Secretary he had done an immense amount of work for the Empire, and there had not been such a Colonial Minister since the days of Chatham; he had earned for himself an undying reputation for the work he did in drawing closer the links between the Mother Country and the Colonies." In addition the Association wished to honor him for his work in connection with the study of tropical diseases. The interest he exhibited was not merely of an academic order, for he was directly responsible for the calling into existence of the two distinguished Schools of Tropical Medicine in London and Liverpool respectively.

Because of the absence of Mr. Chamberlain, on account of ill health, Professor Saundby handed the

certificate to his son, Mr. Neville Chamberlain, and asked him to convey it to his honored father, with the expression of their deepest respect and admiration. Mr. Neville Chamberlain in return said that his father had ever regarded with peculiar satisfaction his work in connection with the founding of two schools of tropical medicine. These schools had opened up a new field of medical science, and like irrigation in the desert they had added new tracts to civilization. He assured them that this certificate would be a source of gratification to his father, who, unlike many other pioneers, had been fortunate to see his own work recognized in his lifetime.

THE CANADIAN MEDICAL PROTECTIVE ASSOCIATION

It has been our pleasure very frequently to call the attention of the profession of Canada to this very important Association. We consider the annual fee of three dollars is the best and cheapest sort of insurance that the general practitioner can have, against unjust prosecution for alleged malpractice. The object of the Association is to protect its members from prosecution, when such action appears to the Council, Solicitor and Committee in charge to be "unjust, harassing, or frivolous."

The Association was organized during the annual meeting of the Canadian Medical Association held in Winnipeg in August, 1901. The total membership now is 730. Different provinces: Ontario, 443 (over 60 per cent. of the total); British Columbia, 87; Quebec, 62; New Brunswick, 31; Alberta, 28; Mani-

toba, 26; Saskatchewan, 26; Nova Scotia, 25; P. E. Island, 2. It would appear from these figures that outside of Ontario and British Columbia the profession takes comparatively little interest in the Association. Among cities Toronto supports it most strongly, having 136 members; Montreal has 43 members. The whole of the old Province of Quebec outside of Montreal has the small total of 19 members.

We learn from the report of the worthy President, Dr. Powell, that during last year the Association lost its first suit since its organization, and had to pay the costs. While only one case came to the courts, in ten other cases actions against members were threatened, but when the plaintiffs found that determined resistance would be made they withdrew. We hope the members fully realize the vast importance of the influence of the united body forming the Association in stopping threatened law suits. The financial position is excellent. After paying all expenses there is a balance in the bank of six thousand eight hundred dollars. Dr. Powell, the President, well deserves the thanks of the profession for the magnificent work he has done for this Association.

SIR WILLIAM OSLER

In the year 1869 three bright boys—Dick Zimmerman, Willie Osler and Fred. Grasett—took the first year examination in medicine in the University of Toronto. What became of those three lads from whom much was expected?

Zimmerman, the son of the railway king of Niagara Falls, completed his undergraduate course in

Toronto; stood first in every subject in the various examinations of the university, and graduated in 1872. He took a post-graduate course in London, England, and was one of the resident staff of St. Thomas' Hospital for a year. While there, Murchison, St. Thomas' greatest clinical teacher, said Zimmerman had one of the clearest and brightest intellects he had ever met. He returned from England, and commenced practice in Toronto in 1875. A brilliant career was predicted for him; but sickness and death soon came, and the name of Dick Zimmerman is scarcely known to the present generation of doctors.

Grasett completed his undergraduate course in Edinburgh, and did much post-graduate work in that city, being for some time one of Lister's dressers. He returned to Canada, and commenced practice in Toronto. Full of dash, energy and ability, he soon became known as an expert surgeon and an admirable teacher of surgery. He is still with us—active, keen and alert as ever—long may he live.

Osler completed his undergraduate course in McGill. Then, as now, there were great teachers in McGill; and all took an interest in the modest, enthusiastic, bright-eyed boy, who appeared different from other boys, perhaps, to some extent at least, because of his former associations with the great Bovell of Toronto. After graduating, and after faithful post-graduate work in Europe, he returned to Montreal and taught physiology in McGill. At the same time he did much work in pathology in a quiet way. For years he was the willing slave, so far as "dead house" work was concerned, of the medical profession of Montreal. While his friends made

heaps of money he was *working* and *living*. Soon he became a teacher of clinical medicine, and then came his reward. While working in the laboratory and post-mortem room he had not become a scientific prig or a visionary dullard. He never held the opinion that science and art in medicine should be divorced. He taught physiology, pathology, diagnosis and treatment at the bedside. Very soon his reputation as a teacher of medicine went far beyond Canada. The University of Pennsylvania wanted him, and McGill, unfortunately for Canada, as some thought, let him go. It seemed a misfortune then, but we doubt at present the correctness of such opinion. It will probably be conceded now that it was better for the medical world, Canada included, that Osler went to Philadelphia. Johns Hopkins soon wanted him, and got him. Then Osler developed a new trait. He showed himself to be a very able administrator; and, since his departure from Baltimore, no one has quite filled his place. But Johns Hopkins couldn't retain him. The old world wanted him and got him. Grand, majestic, venerable Oxford called him and he went. He had been climbing the great mountain of scientific medicine, and then reached the summit. One might suppose from his own teachings and writings that his success was due simply to hard work. We don't exactly agree, but we quite believe that without *work, work, work* he would never have reached such lofty heights. But there is another side to Osler. In climbing he never stepped on the necks of others. On the contrary he was ever sympathetic and generous towards his fellows. All his efforts in his associations with workers in our profession have been uplifting. When Osler was honored by the King his many

friends were delighted, but not surprised. We respect him because of his great ability; we admire him because of his wondrous versatility; we congratulate him upon the honors that have been heaped upon him; but, above all things, we love our dear Osler for the good that is in him.

ONTARIO MEDICAL COUNCIL

The College of Physicians and Surgeons of Ontario, with its governing body, which is generally known as the Ontario Medical Council, came into existence by Act of Parliament in 1866. We know of no one now living excepting perhaps Sir James Grant of Ottawa, who has an intimate knowledge of the various meetings of those, who after many consultations and much careful thought framed the Act which was passed at that time. Among the most prominent workers were Drs. J. R. Dickson, of Kingston; John Turquand, of Woodstock; Henry H. Wright, and W. T. Aikins, of Toronto. The desire of each of these promoters was to elevate the standard of medical education in the Province of Ontario. Many people now living have been told by these promoters about the enormous difficulties which had to be overcome. When the Council came into existence it was not pretended by any one that the new body was perfectly satisfactory in all respects. It seems unnecessary at the present time to discuss many of the crude methods of the Council in those early days, but we think it was generally admitted for many years at least that it did elevate the standard, especially so far as final examinations are concerned.

During these same years it was generally considered that the discussions of its members during the annual meetings were not always very dignified. About the year 1890, party feeling in the Council ran very high. It was contended by certain members of the Council that the affairs of the Council were controlled by a clique composed of so called school men and a few territorial representatives. The following members of the opposition organized what was known as the Medical Defence Association: Drs. Sangster, McLaughlin, Armour, Eastwood and Cockburn. This Defence Association was composed of members of the Council and members of the profession in all parts of Ontario, the enrolled membership at one time being 1,129. After many acrimonious discussions, and the publication of many articles in the medical and lay press, certain amendments were made in the Ontario Medical Act in 1893.

The principal changes introduced by the new Act were as follows:

1. The number of members from territorial divisions was increased from 12 to 17.
2. Elections to be held once in four instead of once in five years.
3. Contested elections will be tried by County Judges.
4. All matters pertaining to fees to be paid by members of the profession towards the expenses of the Council to be under the control of the elected members of the Council. That is the representatives of the universities and medical colleges to have no voice and no vote regarding the annual fee.

The Defence Association endeavored to abolish university and school representation. The Legisla-

ture, however, refused to agree, because such institutions had vested rights which they surrendered for a consideration (representation) when the Council was organized. While, however, the Legislature refused to interfere with these vested rights it practically yielded to the demands of the Defence Association by increasing the demand for territorial representatives. The Council after '93 was composed of 17 territorial representatives, which was increased to 18 last year by the addition of one division in the neighborhood of Port Arthur; 8 collegiate representatives and 5 homœopathic representatives. That is, at the present time, 31 in all.

Dr. Hart, the representative of West Toronto, gave notice at the annual meeting in July, 1910, that at a subsequent session he would move that the representatives of the Council be reduced to 14, namely: 9 territorial, 3 college and 2 homœopathic representatives: that is, the members reduced from 31 to 14. The object of the mover was to cut out one-half the territorial representatives, all the school representatives of bodies which had no teaching faculty in medicine, and 3 homœopathies.

At the time of writing we have not seen an official copy of the minutes; but we have been informed that on the last day of the meeting Dr. Hart's motion was carried with the understanding that the committee in charge should map out the new territorial divisions as quickly as possible.

We do not propose to discuss now in detail the merits of this proposal. We can say positively, however, that there is almost an universal wish on the part of the profession for a very substantial reduction in the number of the Council's members. We

may say at the same time that quite a number would like to see it divested of most of its powers.

There have been many discussions as to the various examinations, which students have been compelled to undergo during the last few years. The burdens of students, so far as examinations are concerned, have become in recent years almost unbearable. Several conferences occurred between representatives of the university and the Council, but it seemed for a time that the more they conferred the wider they stood apart.

In an article in a previous issue we spoke as follows: "We do not desire to discuss in detail the relation existing between the University of Toronto and the Medical Council. We may state, however, that the members of the teaching staff of the university are, without exception, dissatisfied with the treatment the medical faculty has received from the Council during recent years. We hope, however, this unsatisfactory condition of affairs can be easily remedied. A conciliatory attitude on the part of the Council would soon make a wondrous change, and would relieve the embarrassment of many members of the faculty who are at heart friends of the Council."

In the same article, which was published some months ago, we indicated that while the dying Council of last year was disinclined to make radical changes we had reason to believe that the new Council will assume a different attitude to that of the past in many respects.

So far as the examinations are concerned the Council at its last session made remarkable changes. These may be briefly described as follows: 1. The

Council will accept the departmental examination for matriculation. 2. The Council will allow the universities to frame their own curricula. 3. The Council will accept the primary and intermediate examinations (that is, practically the 1st, 2nd, 3rd and 4th year examinations) of the universities. 4. The Council will conduct a final examination in medicine, surgery, midwifery and diseases of women and children at the end of the fifth year.

At present our aim is simply to record certain facts in connection with the Ontario Medical Council without expressing our opinions in detail. We may say, however, that we believe that the somewhat remarkable legislation of the last session of the Council will meet with the approval of a great majority of the profession in the Province.

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Personals

Dr. George W. Ross, of Toronto, went to London, England, in July.

Dr. King Smith, of Toronto, went to Europe in the latter part of July.

Dr. John Caven, of Toronto, spent the greater part of the summer on the Georgian Bay.

Dr. Adam Wright, of Toronto, enjoyed his August vacation at his fishing preserves near Uxbridge.

Dr. Herbert A. Bruce, of Toronto, left August 6th for a trip to Montreal, Quebec, and up the Saguenay.

Dr. Kennedy McIlwraith, of Toronto, spent the month of August in "the woods" north of Stoney Lake.

Dr. J. L. Davison, of Toronto, spent a portion of the summer at the "Tadanac Club" on the Georgian Bay.

Dr. Edmund E. King, of Toronto, spent the month of August at his summer home at Hastings on the River Trent.

Dr. F. A. Clarkson, of Toronto, has returned to town from his summer vacation, having caught many "big fish."

Drs. George McDonagh, Charley Murray, Robert Stevenson, Milton Cotton, Alton Garratt and Ephraim Elliott had a very enjoyable outing on the French River in August.

Dr. W. P. Caven, of Toronto, spent the months of June, July and August at his summer cottage in Sturgeon Lake, near Bobcaygeon.

Dr. Hereward Livingstone has commenced practice at 418 Bloor St. West, Toronto. He will confine his practice to diseases of the ear, nose and throat.

Dr. Charles O'Reilly, of Toronto, sailed from Montreal, August 12th on a two months' trip to France, England and Ireland.

Dr. R. A. Reeve, of Toronto, spent a portion of the summer in England and was honored by the University of Manchester, which conferred on him the degree of LL.D.

Colonel G. Sterling Ryerson, of Toronto, went to London to attend the Coronation services. He also attended the meeting of the British Medical Association, where he was one of the guests of honor, representing the Dominion of Canada, and especially the University of Toronto.

Dr. George Bingham, of Toronto, has gained much ground since our report last month. Apart from general shock and local injuries to his leg, a troublesome neuritis developed in the right arm and hand, from which he suffered extreme pain for a time. That, however, is disappearing, and the prospects for a good all round recovery in the near future are excellent.

Dr. Bruce Riordan, of Toronto, after his long period of illness extending over nine months is recovering. In the first place his typhoid fever appeared to be of a rather mild sort, but a serious relapse knocked him out very much. After a time a chronic pleurisy developed, which required frequentappings. After recovery from that in May he was considerably below par, and decided on a trip to the Mediterranean. Early in June he went to Montreal, and thence to New London, Conn., where he was so comfortable that he decided on the advice of friends to give up the European trip. At last accounts he was in good form, and returned home about August 20th.

Book Reviews.

A Text-Book of Medical Diagnosis. By JAMES M. ANDERS, M.D., Professor of the Theory and Practice of Medicine and of Clinical Medicine, and L. NAPOLEON BOSTON, M.D., Adjunct Professor of Medicine, Medico-Chirurgical College, Philadelphia. Octavo of 1,195 pages, with 443 illustrations, 17 in colors. Philadelphia and London: W. B. Saunders Company, 1911. Cloth, \$6.00 net; half morocco, \$7.50 net. Sole Canadian agents, The J. F. Hartz Co., Ltd., Toronto.

In this single large volume the authors have presented the methods to be followed in thoroughly and accurately investigating disease with a view to proper and scientific diagnosis and prognosis. There are several features to be specially commended. For instance, suitable and appropriate clinical histories as they have occurred in the authors' private or hospital practice are freely inserted, and add much to impress the reader with the importance of the particular point under discussion. Under each disease the various points of diagnosis are briefly summarized, together with the laboratory findings and tables of differential diagnosis. The section on Diseases of the Nervous System has been written by Dr. T. H. Weisenberg, and has been excellently done. Dr. George E. Pfahler has described the use of the Roentgen rays in diagnosis. The whole volume is filled with splendid original illustrations, which in themselves should be invaluable to the reader in depicting the exact methods of procedure in many examinations.

Anæmia. By DR. P. EHRLICH and DR. A. LAZARUS. Part I., Volume I. Normal and Pathological Histology of the Blood. Second Edition (enlarged and to a great extent rewritten), by DR. A. LAZARUS and DR. O. NÆGELI; translated from the German by H. W. ARMIT, M.R.C.S., L.R.C.P. (London); with five illustrations in the text and five colored plates. New York: Rebman Company, 1123 Broadway. Price, cloth, \$4.00.

With the subject of Hematology the name of Ehrlich will be always associated. Anything therefore coming from him and his workers is to be received with more than passing interest. It is ten years since the first edition of this work appeared, and, needless to say, an enormous amount of investigation has been done

since then, to a large extent stimulated by the appearance of the earlier work. The scientist looking for a summary of the best of hæmatological literature must perforce read this book. He will find there not only the views of the author and his school but a very complete bibliography. This first volume takes up the physiology and methods of examination of the blood, and also the pathological histology. The different theories of the origin of various forms of cells are discussed. Five beautiful plates show clearly the fine points of distinction to be made by a keen observer in the study of the blood elements. The text is clear and distinct, both from a literary and typographical standpoint, and reflects great credit on the translator and publishers.

Studies in Cardiac Pathology. By GEORGE W. NORRIS, M.D., Associate in Medicine at the University of Pennsylvania. Large octavo of 233 pages, with 85 original illustrations. Philadelphia and London: W. B. Saunders Company, 1911. Cloth, \$5.00 net. Sole Canadian Agents, The J. F. Hartz Co., Ltd., Toronto.

It is hard to find words which will at all convey the merit and distinction which this monograph should command. Written by a man who has the subject at his finger-tips, replete with references and bibliography, it should serve as a standard for a long time to come. The plates are beautiful, and with each one is given a full clinical and pathological history of the case it represents. It is not a book of which the real value is perhaps apparent at the first reading, but on careful study one begins to appreciate the masterpiece of medical literature that it really is. An enormous amount of work must have been involved in preparing it, and both the author and the publishers are deserving of much commendation from the profession.

International Clinics. A quarterly of illustrated clinical lectures and especially prepared original articles by leading members of the medical profession throughout the world. Edited by Henry W. Cattell, A.M., M.D., Philadelphia. Vol. II. Twenty-first Series. Philadelphia and London: J. B. Lippincott Company, 1911.

The series of articles which this quarterly selects have always been of a high order, and this number is no exception. Always practical and helpful, sometimes the writers wander off the beaten path, as when Alice Henkel takes up the cultivation of medicinal plants, an excellent hobby for a medical man; some

thing that he could turn to good account should he ever be prevented from practising his profession.

Although all the articles are good, we may be permitted to particularly mention Dr. Wadsworth's contribution on "Wounds," Dr. Laphorn Smith's review of the advances of obstetrics, and Dr. Satterthwaite's discussion of the mobility of malpositions of the heart.

International Clinics has had a warm place in the hearts of physicians for nearly a quarter of a century, and is still living up to its reputation.

The Care of the Baby. By J. P. CROZER GRIFFITH, M.D., Clinical Professor of Diseases of Children in the University of Pennsylvania. Fifth Revised Edition. 12mo of 455 pages; illustrated. Philadelphia and London: W. B. Saunders Company, 1911. Cloth, \$1.50 net. Sole Canadian agents, The J. F. Hartz Co., Ltd., Toronto.

The appearance of a new fifth edition of this well-known work testifies to the high favor in which it stands with the profession. As a book which can safely be put into the hands of a mother we know of none better, as it in no way undertakes to usurp the place of the family practitioner, but will so educate those in charge of the child that they will be more able to intelligently co-operate in the treatment. The book contains many helpful hints in regard to treatment which will prove of great help to the physician who finds the treatment of children a constant source of worry and anxiety.

Cesare Lombroso: A Modern Man of Science. By HANS KURELLA, M.D. Translated from the German by M. Eden Paul, M.D. New York: Rebman Company, 1123 Broadway. Price, cloth, \$1.50.

Biography always makes fascinating reading, and particularly the study of the lives of investigators who have by their researches marked a new era in scientific thought. In this small volume no attempt is made to deal at all fully with Lombroso as the reformer of criminology and criminal sociology. It discusses him as the man and the investigator, an aspect in which to the majority he is not so familiar. One learns here what an ardent research worker he really was and the great advantage that he took of the comparatively restricted sphere in which he had to live and work. His investigations on pellagra are of particular interest. If the greatest study of mankind is man, the present

volume should prove of great value, dealing as it does with a man who made mankind his chief study.

Aids to Forensic Medicine and Toxicology. By WILLIAM MURRELL, M.D., F.R.C.P., Physician to and Lecturer on Clinical Medicine in the Westminster Hospital, etc. Seventh Edition. Sixteenth Thousand. London: Baillière, Tindall & Cox, 1909.

This is a useful member of the Students' Aids Series of Text Books. A surprising amount of information is contained in about one hundred pages. This present edition contains abstracts of most of the recent British legislation dealing with medico-legal matters.

The Sexual Life of Woman, in Its Physiological, Pathological and Hygienic Aspects. By E. HEINRICH KISCH, M.D., Professor of the German Medical Faculty of the University of Prague; Physician to the Hospital and Spa of Marienbad. Only authorized translation into the English language from the German by M. Eden Paul, M.D. With 97 illustrations in the text. New York: Rebman Company, 1123 Broadway. Price, \$5.00.

It is seldom that a work on this subject rises above prudence; indeed some quasi-medical books along this line are positively immoral. But this volume, from the hand of Prof. Kisch, is a model of scientific accuracy, in which this question is thoroughly handled in a way useful to a physician. Every family doctor realizes, as he grows older, the importance of sexual questions to the welfare and happiness of the community. He must inform himself in every way possible in order to be of the most use to his patients. Here is the book he is looking for.

Selections.

Backache

The usual routine for the examination of the back necessarily includes, as its main feature, a thorough test of the anatomical integrity of the vertebral column. Complaint of backache, especially in children, should always suggest the possibility of commencing caries. An obvious case will, of course, reveal itself by the well-known classical signs; but there are numerous instances where the indications of disease are very equivocal, and the observer hesitates in his decision between such comparatively small troubles as rigidity of the spinal muscles or a flattening out of the spinal curves, and the more serious state of tubercular disease. It is just in these perplexing cases that the various tuberculin tests now in vogue come to a timely rescue from the dilemma of doubt which surrounds the management of these patients. Many a child has been condemned to the couch of recumbency for prolonged periods, while the practitioner is haunted by a lurking doubt as to whether, after all, such a drastic remedy is really necessary for a disease whose presence is merely hypothetical and inferential. The tuberculin tests may be implicitly relied upon to banish this harassing hesitation from the mind of the practitioner.

The appearance of deformity in spinal caries is an indication that the earliest opportunities of treatment have been neglected. Pain always precedes deformity. In the upper dorsal region the vertebral column is so well supported by surrounding bony structures that the lesion needs be very advanced before deformity occurs. In the lumbar spine the very onset of the disease is attended by pain and muscular rigidity which should leave very little room for doubt. This is because the lumbar spine not only has no osseous support, but has itself to support a much greater weight than the upper dorsal spine. Lumbar caries is productive of much pain at night, because the antero-convex curve of the lumbar vertebrae becomes flattened out in the attitude of recumbency, and painful pressure is thus exerted on the diseased tissues. A not infrequent sequence of events in a child is the complaint of pain in the back, lasting for weeks or months, then a cessation of these pains for some considerable time, and subsequently the discovery of a deformity

which has apparently come about quite suddenly. The moral is to exhaust every diagnostic procedure in order to ascertain definitely the cause of persistent pain in the back.

An aching back is not the only pain for which Pott's disease is responsible. A girdle pain will at once suggest, to every competent practitioner, the possibility of vertebral caries, but such a condition as a long enduring pain in the shoulder and arm, with a long-established diagnosis of rheumatic neuritis, has more than once proved to be due to caries of the lower cervical vertebræ. Other localized pains in other positions similarly have remained quite inexplicable, or have been erroneously interpreted, until a careful investigation of the spine has revealed their true causation. In these instances it is obvious that the disease has affected the bony intervertebral foramina which gives exit to the spinal nerves and has involved them in a pressure neuritis. But neuritis of this character may be due to quite another variety of vertebral disease, *i.e.*, to osteo-arthritis affecting the spine. Bony outgrowths are liable to develop in the spinal foramina, and exert pressure on the nerve roots as they pass out. There are, however, so many points of difference between vertebral osteo-arthritis and Pott's disease that the differential diagnosis presents no real difficulty when the evidence of facts is carefully weighed.

It is probably not recognized by most practitioners that the sacro-iliac joint is one which is subject both to severe sprain and definite subluxation. This lesion often simulates lumbago with typical precision, with sudden spasmodic seizures of pain, persistent aching, aggravated by the slightest movement, and extension of pain along the sciatic nerves. These constitute the chronic protracted cases of lumbago which bring so much discredit to the physician, and include a certain number of apparently incurable sciaticas. It is therefore imperative to examine the condition of the sacro-iliac joint in all cases of lumbago and sciatica wherein treatment, on the ordinary approved lines, appears to fail. One hardly realizes that the sacro-iliac articulation is a real joint in the sense of its possessing contiguous surfaces of articular cartilage and an enveloping synovial membrane. Obviously the displacement between these surfaces can be but slight, but it is actually enough to give considerable trouble. If the lesion is recognized, it can be remedied by manipulation, and many observers have testified to the sudden relief, which is accompanied by an audible or palpable click.

—*Folia Therapeutica.*

A Post-Mortem Phenomenon

In the *Deutsche Medizinische Wochenschrift*, Dr. H. E. Hering calls attention to a post-mortem phenomenon which he has observed on auscultation of the chest immediately after death and which does not appear to have been described hitherto. He was attending a patient at the time of death, and when the last respiratory movements had passed away he applied the stethoscope at the cardiac apex. There was no longer any heart-beat to be heard, but he was surprised to hear a slight continuous murmur. On applying the stethoscope to the lower margin of the sternum he observed the same murmur. The phenomenon was confirmed by his two assistants. The murmur was not rhythmic but continuous, and ceased at the end of one or two minutes. It was soft and appeared to be produced immediately under the point auscultated. A little later one of his assistants observed the same murmur in a similar case, but this time it only lasted about half a minute. In regard to the origin of this bruit, the first idea was that it was produced by a rigor of the heart, but on further reflection it seemed hardly probable that the dissociated contraction of some cardiac muscular fibres would produce such a bruit. According to the author, the most plausible hypothesis would appear to be that the bruit is of vascular origin, and is produced by the blood continuing to flow from the arteries toward the veins for a short time after the heart has ceased to beat. The fact that this occurs has already been shown in the case of animals. Dr. Hering proceeds to show that such a movement of the blood might well produce a bruit such as has been observed by him. He suggests that the same phenomenon takes place during life, but the heart sounds prevent it from being heard.—*The Hospital*.

Significance of Urochromogen for the Prognosis and Therapy of Pulmonary Tuberculosis

According to Weisz (*Münch. Med. Woch.*), excretion of urochromogen in pulmonary phthisis, as well as in other infectious diseases, is the expression of a toxic disturbance of the cellular metabolism, which appears as soon as the toxin enters the circulation. This does not happen in phthisis as promptly as in typhoid fever, measles, sepsis, etc., which are toxinæmias from the outset. The renal excretion of urochromogen in tuberculosis should occur parallel with the development of fever. As has

been known since the first application of the diazo reaction in tuberculosis, the more constant and the more marked the excretion of urochromogen the graver the prognosis. The same is true of the other affections. As always happens, however, ironclad laws cannot be laid down under these circumstances, for cases do end favorably after pronounced diazo reaction. The unfavorable character of the prognosis is bound up largely in the extension of the disease, and even severe local destruction is not necessarily conterminous with a fatal ending. The reaction may be conceived as illustrating a progressive weakness of resistance on the part of the cells of the body to the disease, which is further shown in the lessened demand of the tissues for oxygen. But in a case of this sort the grave prognosis may be offset by our therapeutic resources, as in a case cited by the author of recovery in a desperate case due to establishing an artificial pneumo-thorax.—*Medical Record*.

A Rapid Method of Healing Abscess of the Breast

Seff (*American Journal of Surgery*) formulates the following rules for guidance in the treatment of suppurative conditions of the mammary gland: On the first appearance of localized pain, tenderness, and induration, he advises the constant application of heat in the form of hot compresses, for from twenty-four to forty-eight hours. Under this treatment the indurated area becomes absorbed and the breast returns to normal in a few days. However, if pus is already present, the application of heat hastens the softening of the indurated area and indirectly leads to the earlier evacuation of the pus by surgical means. As soon as a definite area of softening makes its appearance, a very small stab wound or puncture is made with a scalpel, and the pus is allowed to escape. The cavity is then washed repeatedly with a 1 to 5000 solution of bichloride of mercury. With a small hand syringe the abscess cavity is then filled with undiluted tincture of iodine. The application of the iodine usually produces a moderate amount of pain of a burning character, which lasts but a few minutes. Within a very short time there develops an area of redness extending for a considerable distance beyond the confines of the abscess. This usually persists throughout the whole period of healing. He employs neither packings nor drains of any kind. A wet dressing of liquor Burowii is usually applied. The bichloride of mercury solution and the tincture of iodine are used at subsequent dressings (usually at intervals of from

twenty-four to forty-eight hours), as long as the discharge continues to be purulent in character. When the discharge becomes serous, iodine alone is injected and a firm, dry dressing is applied. Within twenty-four hours after the first application of the bichloride of mercury and the tincture of iodine there develops a well marked zone of induration in the abscess wall. This persists during the entire period that the abscess discharges and gradually disappears within ten days after the abscess cavity has completely healed. In the majority of the cases healing takes place within from ten to fourteen days. The original incision being practically a puncture wound leaves a barely visible scar. The advantages for his method he states as follows: Very small single incision. Comparative painlessness, as packings and drains are unnecessary. Secondary abscesses do not occur. Short time consumed for each dressing, and comparative infrequency of dressings. Short duration of the healing process. Inexpensiveness. Nursing is interrupted only for a short time (six days). Absence of large scar formation.—*New York Medical Journal*.

Operative Treatment of Varicocele

Nilson (*Zentralbl. für Chir.*) is of opinion that the two main elements of success in the operative treatment of varicocele are removal of the enlarged veins and elevation of the testis. The latter condition, he holds, is not fulfilled by Bennett's operation, in which the stumps of the shortened cord are brought together by a ligature. Phlebectomy alone will not always effect a satisfactory cure, as in many instances the patient continues to suffer from subjective troubles on account of the ptosis of the testis. The following operation, devised with the aim of obtaining high suspension of the testis, has been practised by the author in 65 cases. An oblique incision is made over the inguinal canal, as in Bassini's operation for hernia, and the cord freely exposed by dissection. If the external spermatic vein be found varicose, a portion of this vessel should be excised. Through a longitudinal wound along the front of the scrotum the dilated veins of the cord are isolated by blunt dissection. The whole mass of veins thus detached from the rest of the cord is ligatured high up in the wound near the peritoneum, and then divided. The long venous stump attached to the testis is then thrust from behind forwards through a slit made in the conjoined tendon, drawn well through, and tied in a loose knot. The testis is thus raised to what seems to be a questionable position, as it is made to rest

in the groin and behind the abdominal muscles, where it is likely, it might be imagined, to cause the same troubles and to undergo atrophy and degeneration to the same degree as the undescended testis.—*British Medical Journal*.

Sigmoiditis and Infection

Poulain (*Arch. gén. de chir.*), in a contribution on sigmoiditis, an infection of the internal genital organs of the female, publishes a series of cases in support of the following propositions: (1) The sigmoid flexure is very readily influenced by infection originating in the female genital organs. The microbic propagation is effected by way of the peritoneum, and is revealed by the formation of adhesions that may be so abundant and formidable as to give rise to a para-intestinal tumor, and thus to be the starting point of obstruction. (2) Infection of the sigmoid loop, such as may be set up by constipation, is apt to react on the genital organs. This reaction causes annexial symptoms, the diagnosis of which is often very puzzling. The lesions, when treated in good time, are curable, but when neglected may cause irreparable damage of the genital organs. (3) If adhesions be formed between a salpingitic pouch and the sigmoid loop the infection caused by the latter may contribute to intensify the lesions. This may explain the prevalence of salpingitis on the left side. (4) In every case of annexitis, and especially when the painful symptoms are most pronounced on the left side, it is advisable to have recourse to warm intestinal lavages in preference to vaginal injections, as the former plan of treatment both acts on the annexial mischief and favors energetic disinfection of the sigmoid loop. (5) It is always necessary to have recourse to this treatment before operating for salpingitis or on a sclerocystic ovary.—*British Medical Journal*.

Anterior Metatarsalgia

Forbes (*Amer. Journ. of Orthopedic Surgery*) describes an operation for the relief of anterior metatarsalgia, including Morton's disease. Since the condition is generally caused by the falling of one or more metatarsal heads from an abnormal laxity of the ligaments and transverse metatarsal muscle, the procedure aims at reposition of the depressed head rather than excision, as usually practised. The pressure upon the soft parts beneath the

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Original Communications

SERUM TREATMENT OF PNEUMONIA*

BY J. H. DUNCAN, M.D., CHATHAM.

Gentlemen,—That your President and Executive should have asked me to lead in the discussion on "The Serum Therapy of Pneumonia" is an honor that I neither sought nor expected, and yet it is an opportunity for which, in spite of my keenly-felt unfitness, I would most heartily express my thanks.

The subject laid before us is a broad one, so that, for the sake of clearness, and for definite results, I ask your permission to reduce its scope. If all pneumonic symptoms and manifestations were due to the presence and activity of the pneumococcus our path would be clear and comparatively easy. As a matter of fact, however, we meet with pneumonias dependent on the aspiration of diphtheritic and other poisonous material from the mouth and throat; pneumonia is caused by the presence in the lung of the typhoid bacillus and by the streptococcus. We meet also with so-called asthenic and senile pneumonias. Now, to include all these atypical forms in the discussion would necessitate the consideration of the applicability and influence of a large number of sera, with the results in each case. With these limitations we will proceed with the brief discussion of "serum therapy in croupous or true lobar pneumonia."

In Allbutt and Rolleston's System of Medicine, Vol. 5, page 196, we find this definition: "Acute lobar pneumonia is an infective disease directly resulting from the localization within the lung tissue and the subsequent multiplication in that situation of a specific micro-organism commonly called the pneumococcus, also known as the diplococcus lanceolatus."

*Read at the Meeting of the Ontario Medical Association, Niagara Falls, 1911.

There are many other inflammatory affections of the meninges, of the abdomen and the pelvis, due to the life and growth of the pneumococcus, which would naturally have an interesting bearing upon the subject in hand, but of these we cannot speak at present.

The diplococcus lanceolatus is found as a harmless saprophytic germ in the mouth and fauces of many if not most of healthy persons at certain seasons of the year. It is also often found in the secretions of cases of acute and chronic bronchitis, and in some cases is the only important pathogenic germ in such secretions.

As Nothnagal puts it, "They (the pneumococci) are so frequently found in the mouth, in the nose, and in the air passages of healthy individuals that it can confidently be asserted that they are only waiting for a chance to become pathogenic in the lungs."

We may therefore conclude that the pneumococcus may live in the normal bronchial secretion or on healthy mucous membrane, but it cannot multiply as a pathogenic force.

As my own working hypothesis in the treatment of pneumonia, allow me then to draw the following outline without any attempt at absolute scientific accuracy.

An individual is exposed to severe external chill, with the consequent sudden arrest of elimination from the skin, or is exhausted by distress, by long watching in the sickroom, or by some debilitating disease; as a result the blood stream necessarily becomes vitiated, the bronchial secretions lose their normal character, and the inherent resisting power of the bronchial mucous membrane becomes impaired. With these changes the bronchi become culture tubes for the otherwise harmless pneumococci. For hours or days the multiplication of germs goes on, while Nature masses her forces for local defence. The first struggle ends in the death of a large number of the invading germs, with the consequent liberation of toxins. Then follows the autogenous vaccine reaction of chill and fever, and the least resistant lung area becomes the seat of conflict. The first struggle has, however largely shut off that area from the general circulation by the deposition of leucocytes. The toxins may, and do, penetrate the newly-formed barricades, but the dead and dying bacteria can no longer reach the circulation to produce fresh reaction; hence, under ordinary conditions, we have no more chills, no more sudden exacerbations of temperature, only the steady glow of battle behind entrenchments. The result of this depends on the question of Nature's power to

endure poison till the imprisoned germ life has been smothered in the products of its own activity and growth.

According to this view of the situation, and I present it simply as my working hypothesis, we have in the treatment of pneumonia three facts to face. First, a localized infected area teeming with germ life and death, and the consequent production of toxins; second, leucocytosis segregating by inflammatory walls the poison centre; and third, the production in the blood of serum antibodies or antitoxic agents for the neutralizing of the circulating poisons. As we shall attempt to show, prompt action may arrest the early germ development, so that the whole process falls flat. Failing this, the local struggle between germ and leucocyte produces the autogenous vaccine which stimulates Nature to more strenuous leucocytosis and agglutination and the production of antibodies.

Prolonged or spreading pneumonias are due to the failure of leucocytosis and agglutination to localize the growing disease. Death is due to the lethal action of the toxins on the tissues; recovery is dependent on the antitoxic power. If then, we can safely add sufficient antitoxic power to Nature's product, we have rendered victory certain.

If, in a patient who has been exposed to severe external chill, free elimination, more especially by the bowels and skin, can be re-established, the chemical balance of the blood and secretions is restored and pathogenic germ growth arrested, so that no pneumonia, not even an ordinary cold follows. If, on the other hand, no such restoration of balance is achieved, the later toxic, or more properly, reaction chill follows, and a pneumonia or other microbic disease is established, according to the special germ life waiting for a culture medium.

In pneumonia, I have found, in the majority of cases, that free and persistent elimination, particularly by the skin, gradually restores this hypothetical chemico-physiologic balance of the circulating fluids, relieves them from an over-burden of toxic material, and probably favors the rapid production of anti-toxins. Be that as it may, the temperature gradually falls, consolidation takes place, if at all, very imperfectly, and the patient recovers before the ordinary period of crisis and without material exhaustion.

An effective serum for the treatment of a specific germ disease possesses two well-marked properties: First, that of immunizing unaffected tissue, which gives the serum power as a prophylactic, and makes it potent in arresting the spread of active disease; the second is the power of neutralizing toxins

circulating in the blood. Diphtheria antitoxin possesses both of these properties in a marked degree, as the experience of almost every practitioner will amply attest. The same is largely true of antistreptococcus serum, while antitetanic serum is powerful as an immunizer but feeble as an antitoxin. It is a matter yet to be fully proven whether or not we have at our hand a serum capable of manifesting this double function in dealing with pneumococcic disease.

The opening of the present discussion and the presentation of my limited experience along this line have as their object the furtherance of this most important enquiry.

During the past two and a half years I have used, or recommended in consultation, Stearn's pneumolytic serum in over thirty cases of well-marked pneumonia. The general results have been similar to those we obtain from the administration of serum in diphtheria, namely, moderate amelioration of the symptoms shortly following the first dose, and a few hours after the second injection, pulse, temperature, and, if given early enough, respiration also, drop to nearly the normal level. Out of this series, two under my own observation died, seeming to receive practically no benefit from the serum. One was a colored child six years old, very feeble, who had just imperfectly recovered from a severe attack of measles. The case was one of broncho-pneumonia, in which the bronchitic symptoms outweighed the pneumonic. The disease was probably not pneumococcic in its origin. The other was an old man, also colored, aged 75 to 80 years. He staggered into my office with a temperature of 103, pulse feeble and irregular at 120, while respiration was painful and very rapid. He had been two weeks in bed, with only such food as he had been able to cook for himself. The base of one lung seemed to be undergoing resolution, while that of the other gave evidence of fresh trouble. Rusty sputum was very abundant. The case was clearly a pneumococcus infection. Serum, however, seemed to have little effect, the patient sinking from exhaustion on the fourth day after the first dose. The serum was also quite ineffective in two of the patients seen in consultation. One was an old tubercular case, much emaciated, with very extensive bronchitis and complete consolidation of the right base. Serum was advised simply as a forlorn hope. The patient died a few hours after my first visit. Even if this case had been a true lobar pneumonia the time for the administration of serum had, properly speaking, passed.

The other fatal case was apparently not severe in its inception. The patient was a woman over thirty, pregnant about nine months. Delivery took place on the second day of the pneumonia after a short and easy labor. On the following day extensive bronchitis developed, along with rapid increase of pneumonic consolidation. Serum was given on the second day following labor. Marked amelioration of symptoms followed its administration. Less than twenty-four hours after injection of the serum death occurred quite suddenly, with symptoms of pulmonary embolism.

Four of my recoveries were complicated by extensive pleurisy, with very marked pleural thickening. They convalesced slowly, and lacked the prompt reaction to serum so characteristic of uncomplicated cases. Three cases of apex pneumonia, all of which were lacking in the characteristic rusty sputum, were, I believe, benefited by the serum, but their recovery was not marked by the almost startling promptitude so common in basal cases.

As the result of my observation on serum therapy in pneumonia, I would conclude: (1) That the early use of serum in pneumococcic cases will produce prompt relief, and almost certainly rapid recovery. (2) That in atypical and badly complicated cases we may often have beneficial results from pneumolytic serum. Still we must expect that such will be imperfect and uncertain. (3) The urticaria and pseudo-rheumatism which so frequently follow the administration of all horse sera will occasionally be observed a week or ten days after the pneumolytic serum has been given, but apart from the transient difficulty I have seen no bad results from its administration. (4) That the serum method of treating pneumonia is worthy a further trial by the medical profession, because, as a means of combating the pneumococcus infection it seems to be prompt, effective and safe. And that in cases where we are not sure of the presence of the pneumococcus it is at least safe.

EQUILIBRIUM TESTS *

J. P. MORTON, HAMILTON.

I do not intend, in the fifteen minutes at my disposal, to go into the interesting history of the Equilibrium Tests.

You have all read of Ewald's masterly experiments and of Barany's development of these, and his application of them in testing the anterior and posterior labyrinths. It is only lately that these tests have become well enough understood, and that sufficient uniformity of results has been maintained to allow their use in practice.

Having had the opportunity during the months of February and March of this year of visiting Prof. Bruehl's Clinic in Berlin, and of taking Dr. Sonntag's course on Equilibrium Tests, I thought I might give a short account of just what they are doing practically in regard to these rather indefinite tests in an up-to-date German clinic. The course consists of one hour four times a week, and is given by Drs. Sonntag and Woolfe.

Great stress is laid upon thorough anatomical and physiological knowledge of the inner ear, and to this end Dr. Woolfe gives a special course along this line.

Ernst Urbantschitsch points out that there are three roads of connection from the labyrinth to the cerebro-spinal system.

First.—The vestibulo-nuclear bundle to the oculo-motor nucleus.

Second.—The vestibulo-cerebellar bundle through the restiform body to the cerebellum.

Third.—The vestibulo-spinal bundle, which communicates with the anterior roots of the spinal cord.

When the vestibule is stimulated, as for instance, by syringing or rotation, we would through the first bundle, that is, the oculo-motor connection, get nystagmus. Through the second or cerebellar connection, stimulation produces ataxic symptoms. Through the third or spinal connection we get tremors.

We were given an easy way of remembering the position of the semi-circular canals by the following position of the hands. To demonstrate the right semi-circular canals, hold the right hand palm upward; make the left hand in the form of a right angle, and place it on the palm of the right hand.

*Read at the Meeting of the Ontario Medical Association, Niagara Falls, 1911.

We were asked also to keep in mind that disease may affect separate parts of the inner ear, as this accounts for some apparently paradoxical results in the tests. The cochlea may be badly affected and the vestibule healthy, which would give a labyrinthine condition, with extremely poor hearing and normal vestibular reactions. Again, the semi-circular canals may be diseased and the vestibule normal. One semi-circular canal may be obliterated and the others patent, and in this case the corresponding nystagmus would be absent. In this connection it is also to be remembered that the endolymph of the sacculæ has no connection with that of the utricle. Another important anatomical fact, especially in connection with the caloric tests, is that the horizontal semicircular canals are the ones first exposed, to heat or cold.

In nerve lesions the cochlear or vestibular divisions may be affected; if the cochlear division is affected there is loss of function. Three different parts of this cochlear division are liable to be the chief points of attack.

First.—When the trouble is due to some toxin, as in scarlet fever, influenza, parotitis, etc., the ganglion cells in the spiralis canalis modiolare are diseased.

Second.—If the cause is some calling, then the organ of Corti is attacked, due to trauma.

Third.—In nerve degenerations, such as tabes, the fibres going through the modiolus are first and chiefly affected. When vestibular divisions are in trouble, simple stimulation gives nystagmus, vertigo, ataxia, tremor, or perspiration. In destruction of this division, one, of course, would not be able to elicit these normal vestibular actions.

In the Bruehl Clinic there are four tests adopted—rotation, caloric, static and pressure tests.

Rotation Tests.—Until a week before I left the clinic, they were using an apparatus consisting of a seat which revolved. There were two metal railings encircling the patient, one on a level with the patient's breast, by which he steadied himself, and the other about on the level with the top of his head. Dr. Sonntag would take a normal person, and by rotation to right or left, with the patient's head erect, tilted forwards or backwards or to either side, could produce any form of nystagmus which he desired. A week before I left they got their new chair, lately perfected by Barany, and costing about \$125. With this they were able to fix the patient's head in any desired position, and the patient's fixation point could be made definite. One is able to produce right or left horizontal, vertical, rotatory

or combined rotatory and horizontal nystagmus. We had a model of the semi-circular canals which, when placed on the chair and rotated in the various directions, showed exactly why such or such a nystagmus was obtained by such or such a rotation. The ability to do this is sufficient to show that Ewald and Barany have certainly arrived at the scientific explanation of the various nystagmic phenomena.

The patients are first subjected to the other well-known ear tests, for the vestibular tests must be taken in conjunction with these. Great stress is laid on exact testing of the upper tone limit by the monochord, which is considered much more accurate than Galton's whistle. The patient was also examined for physiological and spontaneous nystagmus. The degree to right or left, where this happened, was noted. The patient was then rotated about ten times in about ten seconds, and if nystagmus was elicited before the patient turned his eyes to the degree noticed for the physiologic or spontaneous nystagmus, it was considered as due to the rotation. When physiologic or spontaneous nystagmus are present it is almost impossible to perform this test scientifically without the new Barany chair. The opinion seems to be that physiologic nystagmus is more common than generally supposed. The duration of nystagmus is noted in a general way, but not measured in seconds. They speak of a long or short nystagmus; no induction period is taken into consideration, for if the vestibule acts at all it does so immediately on the sudden stopping of the rotation. They say that perhaps in neurasthenic conditions the vestibular actions are more active, whereas, in hysterical states, they are less active. However, the deductions from the duration of the nystagmus are considered doubtful, though worthy of experimental attention.

Caloric Tests.—The Caloric Tests are considered more delicate than the Rotatory Tests, although those of the Bruehl Clinic do more experimenting with the latter. A receptacle is hung on the wall with the bottom on a level with the patient's ear. The water is at a temperature of 24 or 40 degrees Centigrade, and the douche is stopped the moment the nystagmus starts. They endeavor to note the induction period, i.e., the time from commencement of syringing till the first twitch of the eyeball. The duration of nystagmus is also noted. They do not consider Dr. D. Mackenzie's fine measurements of the induction period reliable, for, as Barany says, it is very difficult to tell when the nystagmus commences. Moreover, there are so many influences present which may hasten or retard the heat or cold conduction. The shape of the external meatus, the thickness

and structure of the drum, its attachments to the inner tympanic wall, the blood supply, the condition of the chain of ossicles, etc. All these conditions, quite separate from any change in the inner ear, would upset fine calculations. After one learns by operation or other means the exact condition of the case, one can, by nice theoretical modulations, fit the different lengths of the induction periods into the diagnosis. However, they do use the expression "much-delayed induction period."

Pressure Tests.—These are performed by a small instrument fitted with a gauge. In this way they know exactly what degree of plus or minus force is being used. If the fistula symptom does not show in this ordinary way, they sometimes alternately compress and aspirate. Barany uses an ordinary air bag. Alexander, of Vienna, has lately written up several cases with normal eyes in which the fistula symptom was present, and for which he can offer no explanation.

Static Tests.—Patients are made to stand with eyes closed, on both feet, and then on each foot separately. They are asked also to walk forwards and backwards with the eyes closed.

Galvanic Tests.—These are not used in the Bruehl Clinic, in spite of M. J. Babinski's strong support of them. He originated them, and considers them better than all the others. He points out first the characteristics of normal galvanic vertigo, then goes on to show the modifications in different pathological conditions. These modifications are: Increase in resistance, certain oscillations of the head, unilateral rotation and inclination. Although Babinski and Wehl speak so highly of these tests, Bruehl thinks that the current in passing would stimulate nuclei as well as the end organs.

When one comes to apply the accumulated knowledge in regard to the vestibular actions, it affords great assistance in diagnosing certain obscure conditions. Barany allows that slight labyrinthine changes cannot be detected. Most agree that the caloric reactions are the most useful, for they show a reduction earlier, and if we accept MacKenzie's work in regard to length of reduction period, we have at our disposal a fairly sensitive labyrinthine barometer. We will be forced to leave out the galvanic tests, as there are cases on record of complete bilateral destruction of the labyrinth, showing normal galvanic reactions to a three milliampere current.

Let us now consider some of the conditions in the diagnosis of which we are assisted by these tests.

Acute labyrinth inflammation in the right ear on the second

day. There will be deafness, and of course the fistula symptom will be absent. Rotatory tests will give little help, as the other ear is normal. There will be marked spontaneous nystagmus of the horizontal rotatory type to the left, as the right vestibule is out of action. This spontaneous nystagmus soon starts to get weaker; in fact, Barany says if it does not lessen in twenty-four hours that there must be intra-cranial mischief. The caloric reaction will be absent on the right side. Static tests show the patient falling to the right side, and in bed he lies on his right side. Note also in this condition that if the patient alters the position of his head he will fall in a different direction.

Labyrinth inflammation in right ear after two weeks: In this somewhat latent stage there will also be deafness and absence of fistula symptoms. As in the former condition, rotatory tests give practically normal results. Barany claims, however, that if the patient is rotated to the right side, the fistula reactions are about half as active as when the patient is rotated to the left. The chief differences between this and the last condition are: First—that the spontaneous nystagmus is now very weak, in fact, may be wanting, and may be to right or left. Second—The patient's position in bed is normal, and the falling to the right is not so noticeable, because, although the right vestibule is out of action, still the cerebral centres seem to re-learn their balance. According to Prof. Bruehl, either of these two labyrinthine conditions should be treated by doing Hinsberg's operation.

Serous labyrinthitis in right ear: This is difficult to diagnose, as Dr. Scott says, if the patient gets better he has had labyrinthitis serosa. It differs from the two former conditions in that deafness is only partial. The fistula symptom, as in the former conditions, is absent. Rotatory nystagmus is present. The caloric reactions are very difficult to elicit, which proves our former statement that the caloric test is the more delicate of the two. Spontaneous nystagmus is changeable, and is mostly towards the sound side. Prof. Bruehl advises the radical mastoid operation in these cases.

Fistula of the right horizontal semicircular canals, without labyrinthine inflammation: Hearing is present. The caloric and rotation tests are normal. The deciding point is that the fistula symptom is present. Plus pressure in the right meatus, giving right nystagmus. Spontaneous nystagmus is changeable, and may be absent. Rombergism in this condition seems to vary according to the form of nystagmus. In this condition Prof.

Bruehl advises the radical mastoid operation, and then counsels expectant treatment.

Cerebellar abscess of the right side: The vestibular reactions of these conditions are classed under Type A and Type B.

Type A.—Where the vestibular reactions result from the labyrinth. Here the spontaneous nystagmus is strong and to the left side, and of horizontal and rotatory type. Fistula symptom absent. Caloric reaction absent. Rotatory reactions questionable because left vestibule is normal. Patient lies on the left side and falls to the right. In this type Bruehl advises to perform radical labyrinth operation of Neuman or Alexander, and then to wait for further developments.

Type B.—In which the reactions would arise from the cerebellar conditions. As in Type A, the patient is deaf. Fistula symptom is absent. The caloric reaction is absent, and the rotatory nystagmus is questionable. But in this type the spontaneous nystagmus is strong and to the right. The patient lies on the right side and falls to the left. With right labyrinthine destruction there can be no nystagmus of vestibular origin, and so, when there is strong nystagmus to the right, with destruction in the right vestibule, it is due to cerebellar abscess. In some cases, however, right cerebellar abscess will cause left nystagmus, and the point of great assistance in diagnosis of these cases is that if the spontaneous nystagmus suffers no decline in twenty-four hours it is cerebellar in character; if it does become less, it is due to labyrinthitis.

THE CURE OF INGUINAL HERNIA*

BY ROBERT LUCY, M.D., GUELPH.

Replying to a charge of plagiarism, Kipling said, "When Homer struck his blooming lyre, what he wanted he went and took, the same as I do."

In medicine and surgery we are all freebooters, appropriating all ideas we deem worthy.

So, in watching surgeons operate on inguinal hernia, it appeared that excellent points from different sources might be combined with advantage in the ordinary case.

1. The Ferguson curved incision of the skin, beginning nearly one inch external to the middle of Poupart's ligament, curving up on the abdomen, and ending at the pectineal eminence, seemed good, as the resulting scar-line is out of the way of a truss, should wearing one again become necessary.

This flap, dissected down to the external oblique and turned down, gives good access to the subsequent steps.

The opening of the canal, recognizing the lower end of the sac by its white line, freeing and opening sac, and reducing any contents are all done as usual.

2. Kocher's disposal of the sac. Grasp the fundus of the emptied sac with curved forceps, invaginating sac into itself like finger of a glove, through canal into peritoneal cavity; keep ends of forceps close against abdominal wall, and project their points out through a small incision in wall one inch external to the angle of the wound, retracting the skin to avoid the necessity of cutting it; draw the sac taut; tie at the neck; cut off and drop the stump back into the wound. Or, if unable to invaginate the sac, pass the forceps, grasping the sac external to the peritoneum, and similarly through the abdominal wall. If desired, the sac may be tied off high up first before grasping it with the forceps, and the stump transfixed by the stitch closing the abdominal incision.

Reiss says Kocher's disposal of the sac is the main point in the cure; that when this is done the inguinal canal may be closed with No. 1 catgut safely.

3. Goldsphon's method of placing two heavy clamp forceps on Poupart's ligament, letting them fall flat on thigh. This faces the internal surface of Poupart's ligament up, greatly

*Read at the Meeting of the Ontario Medical Association, Niagara Falls, 1911.

facilitating sewing the oblique and transversalis fascia to its lower internal surface.

4. Bassini's closure.—In sewing the internal oblique and transversalis fascia to Poupart's ligament, the first stitch includes the edge of the rectus muscle, uniting it to Poupart's ligament. Four to six stitches complete this row of sutures. The cord is carried to the outer angle of the wound.

If thought advisable, one stitch may be placed external to the cord, which lies in its natural position.

Remove the forceps, allowing Poupart's ligament to resume its natural vertical position. Then, beginning at the outer angle, sew the external oblique to the upper edge of Poupart's ligament down to where the cord and vessels emerge at the pubic bone.

In closing the skin-flap, adjust it carefully, insert a few buried catgut sutures to prevent pocketing, and begin the surface sutures in the centre of the flap to prevent puckering.

5. Applying a 2 per cent. cocaine solution carefully to patient's nostrils a few minutes before giving ether abolishes the sense of smell. The patients go to sleep quicker, not being annoyed by the pungency of the ether.

I have used this plan in 47 cases, with one recurrence, in a child of 16 months, operated on for strangulated hernia. The ages of the patients varied from 5 weeks to 74 years.

Finer grades of Marcy's kangaroo tendon are preferred for the deeper layers.

Judd, reporting from the Mayo's clinic, says: "The strength of closure depends almost entirely on the internal oblique, being the only structure here with good blood and nerve supply."

He reports over 1,650 cases, with practically only 1 per cent. of recurrences.

If the internal oblique looks weak, he takes in the aponeurosis of the external oblique in the first row of stitches, to strengthen the internal oblique, so displacing the cord external to this part of the external oblique.

Kocher, on the other hand, says: "Suture of the deep layers, internal oblique and transversalis to Poupart's ligament, is not necessary for the cure of ordinary inguinal hernia." He attributes his success largely to the use of silk sutures, reporting practically 4 per cent. recurrences. Kocher says Bassini's closure shows 5 per cent. recurrences.

Selected Articles.

PELVIC TUMORS IN THE FEMALE*

BY W. P. MANTON, M.D., DETROIT, MICH.

The cordial invitation of your Secretary to address you to-day conveyed an honor and imposed a responsibility. For the former I desire to express my appreciation; the latter I shall attempt to discharge by calling your attention to a subject of no little importance and interest, for every practitioner is liable in daily routine to encounter pelvic tumors, the detecting and differentiating of which may test his utmost skill and diagnostic acumen. The pernicious dictum, accredited to Mr. Lawson Tait, "when in doubt, operate," has done much harm and brought much discredit to the profession, and has no place in modern rules of practice. For the weaklings in medicine, lacking most in training and experience, are those who take advantage of such advice, and, being oftenest in doubt, oftenest rush to surgery for a diagnosis which should have been carefully worked out beforehand.

As on the correct, or approximately correct, determining of the disorder with which we have to deal depends the future welfare of the patient, failure to bring to each case the most thorough scrutiny and investigation has, in the present day, no extenuating excuse. When resort to surgery must be had, we should operate for definite and known conditions, and the instances in which surgical procedures are undertaken to clear up a doubtful and uncertain diagnosis should be so comparatively infrequent as to be almost negligible. From somewhat extensive observation I am sure that mistakes and failures in ascertaining the true nature of disorders, for the relief of which the patient consults the physician, are frequently and largely due to the omission of two things—non-observance and the study of the patient as a whole, and the neglect of careful history taking. Many years ago Sir George Humphrey enunciated the formula, "Eyes first and much, hands next and little, tongue not at all," which, in the main, is a good working rule. By close and critical observation much may be learned of the patient's condition before she has uttered a word, so that after this, the history and

*Read before the Saginaw and the Monroe County Medical Societies, 1911.

the physical examination, the diagnostic trinity, logical deduction should lead to reasonably correct diagnosis. It is to be feared that many errors result from improper reasoning, and the assigning of too great importance to conspicuous but trivial manifestations, for, as Lockwood says, "The absence of a logical training is . . . one of the greatest defects in preliminary medical education." Writing in 1770, that wise old surgeon, Ambrose Bertrandi, states that the surgeon must "see into the whole body and on all sides with the eyes of the mind," and that "it is not of much importance to know the position, the connections and the form of a part, if one does not know the use, the correlation of mechanism and the action." For anatomy, he adds, should be "reanimated, in order that the living man, who is the subject of your art, may be as well known as the cold and lifeless body." "Sizing up" the patient as she enters the consulting-room, sits on a chair or lies in bed, gives a clue to the possibly existing disorder, and directs attention toward the solution of the problem presented. The gait and holding of the body while in motion, and the conformation of the abdomen may suggest the presence or absence of pregnancy or tumors, of sensitive regions made painful by muscular action or pressure, or, as she lies with knees drawn up, to an acute or chronic abdominal inflammation or its resulting adhesions. The nutrition of the patient also tells its story. The usually healthy, well-nourished individual with benign growths and beginning malignancy; the conspicuous emaciation, from the ravages of cancer in its later stages, or of ovarian new-growths of size and long standing, are exhibits strikingly familiar.

Commenting on this, Lewers observes, "Nothing could be more fallacious than to suppose that a patient is not suffering from uterine cancer because she looks well, and maintains, or is even increasing, her weight." Whatever her appearance, he says, if she "complains of the symptoms in question (of cancer) and is known to have had five or more children, the probability that she may be suffering from cancer of the cervix is thereby distinctly increased."

The expression of the countenance is always suggestive; unchanged or "contented" in so-called harmless neoplasms, it may depict every degree of anxiety, fright and despair in cases of severe pelvic disease and malignancy, while, with the large and rapidly growing ovarian cyst the features assume that "peculiar pinched expression" to which attention was called by Sir Spencer Wells under the term "*facies ovariana*."

The color of the skin of the face is often characteristic:

unchanged, suffused or reddened in harmless pelvic new-growths; pale yellow to chalky in the anæmia from hæmorrhage in bleeding fibroids; or presenting the pale-yellowish-brown tint of the cachexia of cancer. As pointed out by Veit, the facial skin may often appear slightly edematous, most marked in a mild puffiness of the lower eyelids, when uterine fibroids are present. Chloasmata and skin discolorations are not infrequently seen in women suffering from pelvic disorders, and the dark circle around the eyes is as often indicative of local as of general disturbances.

As no one in active practice can carry in mind the details of his patients' various disorders, especially after the lapse of time, the importance of systematic case-history taking cannot be too strongly emphasized. As has been well said, diseases do not usually appear systematically arranged, as in a text-book, but more often present at an angle, with one or more, often misleading symptoms in the foreground, so that the physician must reason out, and by inquiry get back to the obscure but more momentous processes which have developed in the case. Not only do carefully written notes furnish a chart of the present and past condition of the patient and the symptomatology of her ailment, thus rendering essential aid in determining the diagnosis, but they serve a useful purpose in furnishing comparative data for future reference, and refresh the memory as to treatment and the results obtained. They are also of much value in pointing out the mistakes or successes in diagnosis in cases which progress to recovery or fatal termination, or which come to operation.

Moynihan calls attention to the great importance of ascertaining the inaugural symptoms, in order that it may be determined at what point in the course of the disorder operative intervention will give the best chances for relief and cure before more serious morbid changes have taken place which render the outcome of the surgical procedure uncertain or the treatment futile. And he further shows that the study of the pathology of the living is of vastly more importance to the living than the investigation of the terminal results of disease as found in the dead.

In obtaining the anamnesis, while it is desirable to let the patient tell her own story, undue importance must not be attached to statements made until they have been verified by physical examination. For many of the patients with whom we have to do are of nervous temperament, hysterical or neuro-pathic, and symptoms of small moment are often exaggerated

while important points, because they have been less noticeable in causing pain or presenting visible signs, are forgotten, lightly passed over or ignored.

As illustrating the value of the case-history, two patients upon whom I have recently operated furnish illustration.

Case 1. A married woman, aged forty-three, never pregnant, consulted me March 14, 1899, for a variety of general and pelvic symptoms. At this time the uterus, which had been retroverted, was in normal position and not enlarged, but there was an almost imperceptible bulging of the right uterine horn. In October, 1906, the conditions remained essentially the same. In April of the present year (1911) she returned with many of the old complaints and a history of "smothering spells," which were among the earliest symptoms. The uterus had increased to the size of two fists, and a growth, as large as a small flattened orange, occupied the right side of the organ posteriorly. A diagnosis of multiple uterine fibroids was made.

At the operation, enucleation of the tumors was attempted, but on account of their adherence, due to inflammatory changes, the thickness of the abdominal wall and depth of pelvis, this had to be abandoned, and supra-vaginal hysterectomy performed.

Case 2. A married lady, aged thirty-six, the mother of two children, the last born seven years before, was seen in consultation with Dr. W. R. Chittick, February 28th, 1907. At this time curettage was done for a persisting menorrhagia. The uterus was normal in position and size. The following month it was noted that while the body of the uterus remained unchanged the fundus was slightly enlarged, smooth and rounded, due to the presence of a small intramural fibroid. The uterine cavity measured *three and one-half inches*. In April of the same year, the bloody flow continuing, curettage was repeated and a laceration of the cervix repaired. By April 8, 1911, an enormous increase in size of the uterus had taken place, the fundus now being only three finger-breadths below the umbilicus. The organ was in the middle line and freely moveable, the cavity measured *seven inches*. To April 13, abdominal hysterectomy. The uterus, the size of a child's head, was quite soft, and the tumor occupied the greater portion of the organ.

In these two cases, but for the notes taken at different times no tally could have been kept of the patient's condition, nor would it have been possible to have determined to what extent growth had taken place in the tumors within the periods mentioned.

In estimating the value of symptoms, familiarity with and experience in the natural history of pelvic new-growths is of much importance, and one best posted in this respect will have less difficulty in detecting the nature of the presenting neoplasm. In every instance, whether in the single or married woman, the history of abdominal enlargement should always suggest the possibility of pregnancy, and this idea should be maintained until thorough physical exploration has positively excluded its presence. I was once caught napping and over-credulous in trusting to the statements of a supposedly respectable and innocent young unmarried woman. After a hasty and superficial examination a diagnosis of ovarian cyst was made. To my chagrin, on opening the abdomen, a five months' pregnant uterus revealed the true nature of the tumor. In the instance of a seventeen-year-old girl, who had been sent by her physician from an up-peninsular village to the city for confinement, the indefinite story of an indiscretion committed nearly a year before was sufficient to discredit the diagnosis, while a single look at the abdomen as she lay in bed was enough to confirm the suspicion of error, which was subsequently verified by examination. I removed a twenty-five-pound ovarian cyst from the patient a few days later; but it was harder work to convince the home folks that she had not had a baby than it was to do the operation. It is difficult to arrive at satisfactory conclusions regarding the frequency of pelvic neoplasms, since statistics emanating from hospitals where large numbers of these cases are sent for operation do not fairly represent the actual number met with in private as well as in public practice. Could private records be added to those from institutions, there would probably be a considerable change in the percentages as now given. Mortality statistics from large cities are open to the same objections and fall under the same category. Many tumorous conditions may exist during a lifetime without giving rise to sufficient trouble to direct the patient's attention to them, and the host may perish from other diseases, the presence of the growth being still undiscovered.

In 9,227 females affected with tumors of various kinds, Roger Williams found that 28.7 per cent. of the growths originated in the uterus, and only 8.7 per cent. in the ovaries. Broad ligament cysts and tumors of the round and ovarian ligaments were presumably not included. Of the number in which the growths were uterine, Williams found:

Cancer in	1,571
Sarcoma in	2
Myoma in	883
Polypus, non-myomatous, in	191
Cystoma in	2

By this it will be seen that the ratio of malignant to non-malignant new-growths in the uterus is 59.38 per cent. as against 40.62 per cent. While cancer of the uterus is known to exist to an alarming extent, I feel quite sure, from my own experience, that the figures just quoted do not adequately represent the real facts, the frequency of fibroids, for instance, being placed much too low. From my own records, I obtain the following approximate percentages: for fibroids, 62; for cancer, 8; for ovarian cysts, 11; for intraligamentary cysts, 6 per cent. While taken from far too small a number of cases to be of particular value, these figures probably come nearer in representing the number of pelvic new-growths as met with in private practice.

Pain in connection with pelvic tumors is variable in its expression. A patient may carry a fibroid of considerable size for years without inconvenience or knowledge of its existence, and the growth may be discovered only by accident during an examination for other conditions. In investigating an umbilical hernia referred by Dr. C. W. Hoare, of Walkerville, I once discovered a tumor of this nature, which must have grown old with the patient, but of the existence of which she was ignorant. The pedicle was long and thin, the patient fat, but the tumor weighed seven pounds. Another patient, a domestic, knowing that she had a swelling, which, however, was symptomless, requested to have it removed because it was in the way when she leaned up against the washboard. Interstitial and submucous fibroids, especially fibroid polypi, frequently give rise to much suffering, oftener during menstruation, when attempts are made by the uterus to extrude the growth, the colicky pains resembling those of abortion or childbirth. Many cases of persistent dysmenorrhœa are due to small projecting fibroids or polypoid growths which are frequently overlooked. In one patient painful menstruation and interval pain was caused by two or three small submucous tumors situated in the uterine fundus and barely jutting into the cavity. Dilatation of the canal and incision of the tumor capsule entirely relieved the symptoms. In such instances the pain is undoubtedly due to tension—the tumor enlarging without corresponding growth of the surround-

ing parts which, especially the peritoneum, are put on the stretch.

Fibroids springing from the posterior uterine wall, or carrying the uterus backward in retroversion or retroflexion so that it impinges upon the rectum, may give rise not only to constipation and hæmorrhoids, but also to painful defæcation. Developing anteriorly, such growths, by pressure on the bladder, occasion dysuria, and, rarely, retention of urine. In a case referred to me by Dr. Charles T. Southworth, of Monroe, in which a fibroid was known to exist, the pressure of an anterior boss against the neck of the bladder caused retention of urine for twenty-four hours, accompanied by great suffering. The passage of a catheter, which was accomplished with difficulty, relieved the situation, and also led the patient to consent to a hysterectomy.

Besides the pains resulting from pressure on surrounding structures, incarceration of a fibroid below the sacral promontory and torsion of the uterus or the pedicle of the growth may give rise to severe pain, the result of the induced peritonitis.

The structure, position and function of the ovary render it liable to a considerable number of cystic changes, hæmorrhage into its follicles, and new-growth formations. Small tumors may remain symptomless, attention being called to their presence only when, by increased growth, they rise out of the pelvis. Sometimes the patient complains of a feeling of pelvic weight and discomfort on the side of development, with sacral backache and pain radiating down the leg. Occasionally I have noted a unilateral pain in the vagina, beginning at the introitus and running upward, with extension to the leg of the corresponding side. Intraligamentary cysts and tumors give rise to pain from tension and the splitting of the leaves of the broad ligament as they increase in size, and by the formation of adhesions to neighboring parts.

All pedunculated intra-abdominal tumors, dermoid cysts and solid growths of the ovary in particular, are liable to twisting of the pedicle. Acute occurrences of this nature are manifested by the sudden onset of sharp severe abdominal pains, rapid pulse and fever, generally accompanied by vomiting, constipation and marked physical prostration. If the pedicle torsion takes place more slowly, the attacks of peritonitis and the general symptoms may be less severe, but are likely to be repeated at intervals. In a case on which I recently operated for Dr. Arthur Griggs, of Saginaw, a fibroid uterus was associated with a dermoid cyst the

size of a cocoanut. The patient was known to have carried the uterine tumors for some years, but the repeated attacks of peritonitis could be explained only by the presence of the dermoid, the pedicle of which was twisted one and a half turns. Ileus and rupture into the bladder or intestine are also occasional sequelæ of pedunculated cysts, and give rise to pain corresponding to the acuteness of the condition.

Of all the pelvic new-growths in which pain as an early symptom would be of greatest service and value in calling attention to the condition, thus leading to timely examination and the prompt inauguration of life-saving measures in treatment, cancer in its incipency stands out pre-eminent by the absence of this sign. When pain is complained of in the course of cancerous development, it usually marks the extension of the disease beyond the uterine borders, and the invasion of neighboring organs and parts. The cervix uteri being only slightly sensitive, extensive destruction of its tissues may take place without the suggestion of pain being present, and it is only, as a rule, when the parametrium, the bladder or the rectum become involved that pain begins to be experienced. Occasionally a cancerous node which occludes the os or cervical canal or presses on a nerve trunk or plexus may give rise to pain somewhat earlier in the course of the disease, but this is rather exceptional. Simpson pointed out, in 1864, a symptom which he considered pathognomonic of carcinoma of the uterus body and fundus. This consists in the daily recurrence of intermittent paroxysms of pain which sometimes last for hours, and may be "so intense as to cause the patient to groan continuously or scream aloud." This symptom has been confirmed by Ruge and Veit in certain cases, and appears to be due to the contractions of the uterus in attempting to expel the growth when this has assumed a polypoid form.

It must not be forgotten that in occasional instances where local symptoms of uterine cancer are wanting the pelvic disease may be manifested in mammary pain of greater or less severity. While cancer of the ovary is well known to occur, in the majority of instances, as a secondary invasion, and that dermoid cysts of this organ are particularly prone to malignant degeneration, I am not aware that pain is a marked symptom except as it arises in the developmental course in all ovarian tumors. In a recent case, age thirty-seven, referred by Dr. M. L. O'Connor, and in which primary carcinoma of the right ovary, with metastatic growth in left ovary, omentum, and pelvic glands existed, the patient was suffering from adhesive peritonitis and was so sensi-

tive that proper examination was rendered impossible. The diagnosis had to be made from the history and subjective symptoms, which apparently pointed to the presence of a degenerating fibroid or an adherent cyst, the pedicle of which had undergone rotation. The pain incident to the rupture of an ectopic gestation sac is usually put down as coming on suddenly, of great intensity, of a lancinating, tearing character, and is often followed by physical prostration, even in cases where the hæmorrhage is only slight. It is, however, not always of this type, being sometimes so little as to hardly attract the patient's attention. Moreover, this symptom may be closely simulated in other conditions, as when the sudden onset of the pain is caused by torsion of the pedicle of a stalked growth.

In a case in which all of the subjective symptoms of extra-uterine pregnancy were present, I found that the condition was due to tuberculosis of the appendages and adjacent peritoneum.

Hæmorrhage as a diagnostic symptom of pelvic tumors is of considerable importance. With uterine fibroids it is usual in the sub-mucous and pedunculated varieties; it is less often met with in the purely interstitial tumor, and is least often seen when the growth is subperitoneal. The blood loss may take place at the regular menstrual periods, in an augmentation of the flow (menorrhagia); it may occur during the inter-menstrual gap; or it may be continuous, the discharge being only slightly diminished from one monthly catamenia to another (metrorrhagia). At any of these times the blood loss may be excessive, depleting the patient and leading to an acute anæmia, or the flow may be so slight, more like seepage, or show in occasional spots, that the patient is not at first seriously affected and continues with good color and without sign of effects.

In my experience ovarian cystoma do not often exert particular influence on the menstrual function, save at times to give rise to amenorrhœa. In exceptional instances they may occasion a bloody discharge from the vagina which rarely may amount to hæmorrhage. In cases which I have met with this has mostly occurred in women who have passed the menopause.

In cancer, hæmorrhage or some loss of blood is usually the first intimation which the patient has that something is wrong. Bleeding is not, however, always a prominent symptom, being slight and perhaps even absent until the very latest stages of the disease, as in the scirrhus forms of the growth.

When an increase of the monthly flow takes place at the climacteric, or a (supposedly) return of menstruation occurs

following the establishment of the menopause, the sign should be looked on with much suspicion. Stratz calls attention to the fact that a discharge of blood following coitus may be indicative of malignant changes in the cervix; and it is well known that when this is present any severe bodily exertion, straining at stool in constipation, etc., may precipitate a flow. On account of the insidious nature of cancer, its great prevalence and fatal outcome, and the curability of the disease could it be dealt with in its earliest stages, it is the duty of the physician to warn his patients of the dangers of procrastination when symptoms of any kind, and especially pudendal bleeding, attract attention to the pelvic organs. Could every woman of the age of thirty and over be compelled, by legal enactment, to submit to local examination by a competent physician at least as often as once every three months, and malignancy so discovered be promptly dealt with according to modern surgical methods, cancer of the uterus and adnexa would soon become shorn of its hideous aspect and sink to the least of all surgical disorders in mortality statistics.

I shall not attempt to discuss the many points which might be taken up in regard to the physical examination, but will call attention to one or two matters which, it seems to me, are not sufficiently appreciated or at least do not appear to be carried out with any regularity in practice. In determining the pelvic condition, it is not enough to make a combined examination and with the hand underneath the woman's clothing attempt to palpate the abdomen. Before anything else is done the belly should be bared from ensiform to pubes and a systematic search made for whatever may be wrong below the parietal covering. Before a hand is laid upon the abdomen a careful inspection of the latter should be made and all discolorations, enlarged superficial vessels, scars and surface abnormalities carefully noted. The general contour of the abdomen should then be observed, whether it is regular or projecting at certain points, and whether at these places the upper limits seem to rise and fall or the prominence remains fixed during natural respiration or on deep in- and expiration. With free ovarian cysts no movement of the umbilicus is seen, but the movement is more or less marked when adhesions to the abdominal wall have formed. It should be observed whether the abdomen is regularly and symmetrically enlarged, as in ascitic accumulations; whether the upper limits of the swelling slope gradually toward the epigastrium, as in pregnancy, or fall off abruptly, as in fibroid tumors; or whether the prominence is broken into more or less regular projections or is

developed on one side of the median line more than the other, as in multilocular ovarian growths, etc.

A projecting umbilicus with open ring is almost always indicative of free fluid in the abdominal cavity.

In all cases of abdominal enlargement, careful measurements will afford considerable information regarding the presence of ascitic fluid, and the side from which the new-growth has probably developed. When ascites is present, the greatest girth is found at the level of the umbilicus; with ovarian tumors it is usually below this point. Measurements are taken from pubes to umbilicus, from the latter to the ensiform, and from the anterior superior spine of the ileum to the navel, on each side. Following mensuration the abdomen should be carefully palpated and the presence of sensitiveness and tumors or displaced organs determined. In doing this it is well to have a general plan of procedure, and not to press indiscriminately over the whole abdominal surface. My own method is to begin at the left hypochondrium and follow down the colon, pass across the hypogastrium and proceed upward along the ascending colon to the right lower ribs. In this way all of the abdominal organs are gone over, and changes in position and size noted. Pressure at the various points which are supposed to indicate involvement of the appendix, the sexual apparatus, stomach, duodenum, and the lower colon should be systematically carried out, and the mobility of the kidneys determined. Following this the abdomen is percussed and ausculted. Last of all, bimanual examination of the pelvic organs is made.

Incidentally it may be mentioned that ascites accompanying an abdominal tumor is almost always significant of malignancy. Hydroperitoneum is very rarely met with in the presence of uterine fibroids; is frequently present with ovarian dermoids, and, in my experience, is always associated with papillary proliferous ovarian cysts.—*The Journal of the Michigan State Medical Society.*

CANCER RESEARCH AND THE THERAPEUTIC OUTLOOK

A Study Based on the Reports of the Imperial Cancer Research
Fund and of the Cancer Research Laboratories of the
Middlesex Hospital.

BY CHARLES J. WHITBY, M.D., CANTAB.

INCIDENCE, MORTALITY AND DISTRIBUTION.

The importance of the cancer problem needs no demonstration, but is vividly enforced by the estimate of Dr. E. F. Bashford that the chance of a man over 35 years of age dying of cancer is one in eleven, and of a woman over the same age one in seven. The investigation at its present stage takes a biological, rather than a human, form, and has already thrown considerable light on the nature of the processes involved in the development of malignant growths in animals and in man, and the direction in which control of the scourge may most profitably be sought. One of the first facts to emerge was the universality of cancer—the term is used in its inclusive sense—among the vertebrate species. It has not as yet been found among the reptilia, but this Dr. J. A. Murray attributes to their extreme longevity—the identification of a large number of aged individuals being an essential condition for the discovery of cancer cases. For in animals as in man cancer is a disease of senility. As regards the invertebrata we are as yet not in a position to decide, but there are no *a priori* grounds for concluding against its occurrence. Among the numerous races of civilized and uncivilized mankind reports of the existence of cancer have, with insignificant exceptions, been obtained wherever the search for it has been made. And this fact is important, because when one considers the extreme diversity of the habits of these races it becomes obvious that these habits must be of at most secondary rank in determining the occurrence or non-occurrence of the disease. Thus, in 1904, 146 cases of cancer were reported among vegetarians in India and 222 among natives living on a mixed diet. An interesting fact recorded by Dr. Seligman is that in British New Guinea, a country which he says is “but emerging from the Stone Age,” while new growths benign or malignant are rare, such malignant growths as do occur are nearly always

of the sarcomatous kind. Chronic ulcerative and irritative processes are on the other hand extremely common, but gout and arterio-sclerosis are unknown among the natives, whose old age appears to be unaccompanied by some of the retrogressive changes seen in Europeans. Dr. Seligman further notes that the occurrence of malignant disease among these Melanesians seems to be associated in some obscure way with habits assimilating to those of the white man. Further facts revealed by ethnological and zoological research are that sarcoma, as well as carcinoma, is a disease of old age in men and animals; that among domestic animals, if not wild ones, the incidence of cancer probably approximates to that among human beings; and that the prevailing misgivings as to the increase of cancer in civilized communities are not well-founded, being due to the fact that fewer cases escape notice. "Stated generally," says Bashford, "the number of deaths assigned to cancer increases from one country to another in a manner parallel with the increasing accuracy of vital statistics." Statistics prove that not only in regard to the individual, but also in respect of site, cancer and senile decay are causally related. For the incidence upon the various organs and tissues tends to correspond with the period at which their normal cell proliferation enters the senile stage. In man the death-rate from cancer diminishes as younger age-periods come under review, reaching its minimum between the ages of five and fifteen, and rising somewhat in the first five years after birth.

Ethnological research confirms the established view of the rôle of irritation in the etiology of cancer. Thus among female hospital patients in India cancer of the lips, tongue and cheek is over six times as common as among women in English hospitals, owing to the widespread habit of chewing a mixture of betel, areca, tobacco and slaked lime. Epithelioma of the anterior abdominal wall is especially common in Kashmir, a fact obviously due to the peculiar practice of wearing under the clothes an earthenware vessel containing a charcoal fire.

Among animals, our knowledge of the natural history of malignant disease is most complete as regards the mouse, as it has been the subject of the immense majority of inoculation experiments. Sporadic growths occur once in about 3,500 individuals. The mammary glands are the most usual site, and here angiomata, sarcomata, squamous-cell carcinomata, and alveolar or adeno-carcinomata are found in similar proportion to that of mammary growths in the human subject. Metastases

have been found in the lungs in about half of the cases, and are less frequently present in lymph glands or the liver. Sporadic sarcomata are rare in the mouse and are very difficult to transplant.

EXPERIMENTAL TRANSPLANTATION.

The experimental study of cancer was initiated by Professor Jensen, of Copenhagen, who in 1903-4 published accounts of his transplantations of an alveolar mammary carcinoma of the mouse. Portions of this tumor, which has become, so to speak, a classic, were despatched to various laboratories, and have been, and are still being, propagated all over the world. The enormous proliferation of cells derived from this growth, which, starting in one organ of a single mouse, has been continued for 6½ years without showing any signs of exhaustion, is no doubt exceptional. "It would have given rise to a mouse as large as a St. Bernard's dog," says Bashford, writing in 1905. Here we confront one central problem, for the explanation of cancer turns upon that of this power of apparently indefinite proliferation, upon which the phenomena of malignancy depend. Up to the present time successful inoculation of cancer tissue has been mainly confined to the short-lived mouse, but there is little doubt that transference could be effected from individual to individual within the limits of any species in which sporadic tumors occur. It has been effected through three generations with dogs, in which failure was at one time the invariable rule. With Jensen's tumor inoculations of .01 to .02 gramme produce permanent growth in from 85 to 100 per cent. of the mice experimented upon; with other tumors the positive results vary in some relation to the rapidity of growth for the time being. The new growths are the direct descendants of the parenchyma cells introduced, the connective tissue elements undergoing early degeneration and becoming absorbed by the host. The fidelity with which artificial growths reproduce the histological features of the original through generation after generation is a fact of the first importance. "Inoculated tumors often adhere with astonishing fidelity to the peculiarities of the sporadic mother-tumor," says Dr. Gietre. This fidelity is, however, subject to exceptions and fluctuations. Thus, with squamous-celled carcinoma the tendency to become horny may be suppressed for generations and then appear suddenly. We are forced to the conclusion that there is a specific element in the stimulus applied to the tissues of the host by the inoculated cancer cells, the response to which is the production of supporting and vascular

tissues of the same particular type. It is an interesting fact that a higher percentage of positive results has been observed in the inoculation of mice in whom sporadic growths exist, or from whom tumors have been removed by operation, than in normal mice. When a large number of inoculations are made from a single sporadic tumor success varies according as the inoculated cells come from more or less active parts of the tumor in question, and also according to the natural resistance of the mice. "The energy of assimilation of different cancer strains is," says Dr. Murray, "enormously variable. Different series of the same strain may also show great differences. Some very slow growths are very adaptable. Some very rapid ones are less readily transplantable." It might have been expected that cancers of the alveolar type in which parenchyma-cell masses predominate and differentiation is at the minimum would prove more transplantable than the adenomata in which an acinus, tubular, or glandular arrangement prevails. But Gietre in his investigation of the hæmorrhagic mammary tumors failed to note any connection between structure and transplantability. Judging from the results obtained with Jensen's tumor, one might almost suppose that under favorable conditions the proliferative power of cancer cells was of unlimited extent. But a limit probably always exists, and has in many cases been reached. Cessation of growth from new inoculations, followed by spontaneous absorption, may supervene upon a high degree of transplantability.

CYCLES OF GROWTH IN CANCER CELLS.

It is a commonplace of clinical observation that malignant growths do not increase at a continuous and uniform rate. Periods of rapid extension alternate with periods of quiescence or even of apparent or actual recession. Biological research confirms this fact, explaining it as the expression of a well-marked tendency on the part of cancer cells to a cyclical mode of life in which periods of rapid proliferation are succeeded by periods of relative sterility. Thus the percentage curves recording the success in the transplantation of separate tumor strains show a general resemblance in following an undulating course. For inoculations made from cells in the phase of active proliferation succeed better than those made from cells in the quiescent phase. These positive and negative phases of growth are in fact fluctuations in malignancy: during the negative phase there may be said to be a tendency towards absorption; the cancer cells are more vulnerable, and appropriate therapeutic measures

will have a greater chance of success. If a slowly growing tumor begins to grow rapidly, transplantations therefrom will show a correspondingly higher percentage of positive results, because the actively-proliferating cells are more effective in overcoming the natural resistance of the tissues of their hosts. Associated with such positive phases or phases of increased proliferation, there has in some tumors been observed a peculiar conjugation of the nuclei of contiguous cancer cells, and it has been suggested that such conjugation in cells at the site of origin may be the starting point of malignant growth.

SOURCE AND NATURE OF THE STROMA.

Careful histological examination of the site of recent inoculations of cancer tissue has proved that the parenchyma cells alone possess the power of establishing themselves in the new host. The connective tissue elements of the graft undergo degeneration and are absorbed. The quality of malignancy, the parasitic factor, pertains to the parenchyma cells alone; the fibrous and vascular elements of a carcinoma represent merely a reaction on the part of the normal tissues of the host to the presence of the cancer cells proper, whereby these are nourished and supported. And the fact that, upon the whole, though with exceptions and fluctuations in certain cases, the histological features of the original sporadic tumor are faithfully reproduced throughout a given series of transplantations, proves that the reaction in question evoked by the inoculated cells is of a specific nature. "There may be little apparent difference between cancer cells which yet, on transplantation, give rise to stromata of distinct kinds," thus indicating some latent differentiation in the quality of the cells.

The specific reaction from which the stroma results has two main component factors—a fibroplastic process which determines the production of supporting structures, and an angioplastic whereby new blood-vessels contribute to the nourishment of the parasitic cells. The reaction considered as a whole may be of a kind in which these two factors are balanced, the tumor being adequately nourished and supported; or it may show a predominance of one or the other tendencies. If the fibroplastic factor predominate, the parenchyma cells will be ill-nourished and compressed; a tendency to actual absorption and recovery may then be inferred. If the angio-plastic factor prevail, a rapidly growing tumor containing little connective tissue but many vessels, and with a hæmorrhagic tendency, is likely to re-

sult. Finally, in animals which have undergone successful immunization, the inoculation of cancer cells is followed by complete failure to produce a vascular stroma—the cells, left severely alone, soon degenerate and die.

SARCOMATOUS TRANSPLANTATION OF STROMA.

The rule that obtains with regard to the stroma of transplanted tumors, to the effect that on re-inoculation it perishes and is replaced by reaction tissues derived from the new host, is subject to rare exceptions of a very interesting kind. At any stage in a series of transplantations it may chance to be observed that the connective tissue elements of the host, at the point of inoculation, are undergoing very rapid proliferation, resulting in the production of numerous polymorphous cells differing from the cells of ordinary stroma in that on transplantation they prove themselves capable of establishing themselves in a new host. Such a stroma is in fact in process of transition from ordinary connective tissue to spindle-cell sarcoma, and if the series of transplantations be continued that change will shortly be observed. It may in fact be more sudden than as just described. Thus Haaland, in transplantations from a slow-growing adeno-carcinoma, on reaching the seventh generation, found in four out of seven tumors an abundant and very cellular stroma capable of independent growth after transplantation. The change from the delicate and almost cellular stroma of the sixth to the sarcomatous stroma of the seventh generation was sudden and striking. The cells of this new sarcomatous stroma, when re-inoculated together with epithelial cancer cells, instead of undergoing degeneration as did the stroma-cells of previous generations, developed side by side with the cancer cells proper, competing with and beating them in the contest for nourishment and growth. By continuing the series of transplantations the process of transmutation may be completed: the sarcomatous element of the mixed tumor gradually ousts the original carcinomatous element, and a pure transplantable sarcoma is evolved. Similar changes in the stroma of transplanted tumors have been observed by Apoland, Ehrlich, Loeb, Lewin, and Liepmann. The fact that one such change occurred suddenly in a case of a carcinoma that had bred true for $2\frac{1}{2}$ years, through sixty-seven generations, is in itself almost enough to exclude the possibility that the original growth was of a mixed nature. But the most rigorous investigation has failed to show any evidence of a sarcomatous mixture in the mother-tumor or in the previous

transplantations of carcinomata which have subsequently undergone this change. They have usually been tumors of slow growth with a tendency to spontaneous absorption. It would seem that the parenchyma cells, in the course of their passage from host to host, acquire the property of stimulating the connective tissue elements not merely to the extent of producing an ordinary stroma, but to that of an independent proliferation resembling and ultimately exceeding their own.

SUSCEPTIBILITY AND IMMUNITY.

Susceptibility to inoculation varies in different animals (mice, for example) of the same species, in different varieties of the same species, and in the same individual at different times. Successful transplantation is conditioned by two main factors, the proliferative activity of the inoculated cancer cells and the natural resistance of the tissues into which they are introduced. This natural resistance is not something fixed and immutable: it can be raised or lowered on lines analogous to those determining resistance to microbic infections. The fact that inoculation of mice who are already the subjects of sporadic tumors or from whom such tumors have been removed yields a higher percentage of positive results than that of normal mice probably indicates that the sporadic tumors occur mainly in individuals of less than average resisting power, or at any rate that the presence of such tumors tends to lessen that power, if it were originally of normal extent. In a given series of inoculations of normal mice a certain number of negative results is the rule, and it has been found extremely difficult to re-inoculate successfully these negative mice with the same or a similar tumor, less difficult to inoculate them with cells from tumor of a different, and especially of a more malignant, type. In other words the result of unsuccessful inoculation is a temporary active immunity; higher as regards the particular tumor from which the inoculated cells were derived; lower, but still appreciable, towards tumors of other kinds. The result of unsuccessful inoculation is degeneration and consequent absorption of the cellular and other constituents of the graft, and it would appear that the ensuing immunity is determined by this absorption. For it has been found that the increase of natural resistance bears a quantitative relation to the size of the unsuccessful dose. Even after successful inoculations it is usual for a certain amount of the graft to undergo absorption while the remainder grows, and the temporary increase of natural resistance thus induced is indicated by a temporary retardation in the growth of the implanted tumor

which may occur between the tenth and twenty-fourth days. In the opinion of Bashford, Murray, and Haaland the quantitative relation existing between immunity and the amount of cancer tissue absorbed suggests that active substances in the body fluids are concerned in the result. The young of immunized mice are not super-resistant—hence such antibodies, if they exist, are not conveyed in the milk. Spontaneous absorption of a growing tumor, unlike operative removal, confers active immunity which may be absolute for inoculation from the same tumor and relative as regards other growths. Rats have been inoculated with rapidly-growing mouse tumors. Growth is in such cases only temporary, but its cessation leaves the rats refractory to subsequent inoculations. In cancers which disappear under the influence of radium the histological processes appear to be identical with those of spontaneous absorption; and the immunity conferred may be correspondingly complete. By repeated re-inoculation of negative mice with small doses of cancer tissue a residue of animals may be sifted out in which tumor-strains giving 70 to 80 per cent. of success in controls give only 10 to 12 per cent. of positive results.

The natural resistance of mice to cancer inoculation can also be temporarily enhanced by injections of normal mouse tissue (*e. g.*, liver, spleen, *not* testis), and more effectually, of normal blood. The more nearly related in structure and origin the normal tissue injected to a given tumor the greater the protection afforded against its growths. Some tissues of alien nature or origin, instead of increasing, lower the natural resistance of the animal into which they are injected. Thus, while mice treated with emulsions of the skin of mouse-embryos proved highly refractory to inoculation with squamous-celled carcinoma, those treated with skinless embryo-emulsion or with mammary emulsion were rendered hypersensitive to inoculations of squamous-celled carcinoma.

As regards the mechanism of artificial immunity, the chief point to note is that inoculation of immune animals is followed by complete failure of the host to produce a vascular stroma, so that the parenchyma cells, deprived of nutriment, lie inert and die. It is an open question whether this is due to direct action of the immunizing substance on the cancer cells and the suppression of their chemio-tactic properties (power of evoking stroma-reaction), or to a modification of the connective-tissue elements of the host hindering it from supplying the structures necessary to the life of the alien cells.

THE PATHOGENESIS OF CANCER.

It is commonly believed that predisposition to cancer is to some extent a matter of hereditary predisposition. Breeding experiments with mice bearing sporadic malignant growths have, however, as yet afforded no evidence that the liability to carcinoma mammae can be enhanced by inbreeding. Nor does it appear that the lengthy confinement of affected and unaffected mice in the same cage leads to the spread of the disease by contagion. Close observation of 3,000 mice with propagated cancers showed that there is no disturbance of general nutrition comparable to the cachexia observed in human subjects. Consequently malignant growths appear to be devoid of a specific symptomatology.

"The attributes of cancer are," says Dr. Bashford, "the mere consequences of its growth, which is its only constant property." In other words, malignancy depends upon and varies as the proliferative activity of the parenchyma cell, and the theories of cancer all aim at the explanation of this essential factor of the disease. Thus Thiersch and Freund believe that in consequence of a premature senility of the connective tissue it loses its power of holding the proliferation of the epithelial elements in check. The latter, freed from normal restraint, acquires extra proliferative power and reverts to a less differentiated stage. This theory fails to account for sarcoma, unless, of course, we assume the possibility of converse premature ageing of the epithelial elements, a plausible supposition as it seems to me. Cohnheim's well-known hypothesis is to the effect that a group of embryonic cells may be cut off at an early stage from the rest of the body, and from the starting-points of malignant growths. It seems to be based on an unverified and exaggerated estimate of the proliferative power of embryonic cells, and fails to explain such facts as the frequency of cancer of the anterior abdominal wall in Kashmir, mentioned above. Cancer commonly attacks points of chronic irritation; and why should these correspond with the sites of embryonic rests? On the other hand, it may explain the occurrence of some non-malignant growths. Cohnheim's theory has been supplemented by Ribbert and Borrmann, who, in addition to congenital "rests," hypothecate the post-natal isolation of groups of epithelial cells consequent upon chronic irritation of the adjoining connective tissue with proliferation of its cells. Groups of epithelial cells thus cut off from normal organic continuity are assumed to acquire extra proliferative power—that is, malignant capacity. This view has

been supported by the study of precarcinomatous conditions by Victor Bonney; but Bashford believes the connective tissue changes described by him to be secondary to the initiation of the cancerous process. The theory which attributes malignancy to the entrance of a parasite into an epithelial cell has many objections. Thus the disease cannot be transmitted beyond the limits of a given species. The cells of an infective granuloma introduced by inoculation are merely the vehicles for the conveyance of the infective agent. Those of a transplanted cancer are the direct progenitors of the ensuing new growth. Cancer *qua* cancer does not, like true infection, produce any specific chemical symptoms of its presence.

The character of malignancy has been attributed by some authorities to a transformation of the cells concerned from the somatic to the reproductive type, effected by the stimulus of some irritant. It is a well-known fact that in the nuclei of newly differentiated reproductive cells, when undergoing mitosis preparatory to division, the number of chromosomes is only half that found in the nuclei of somatic cells. Farmer, Moore and Walker have described observations of heterotypical mitoses in certain of the cells of growing cancers closely resembling the mitoses of reproductive cells. The chromosomes do not form V-shaped loops but rings, ellipses or tetrads, and their number is reduced to half that seen in somatic mitoses. In the amphias-ter stage the chromosomes lie parallel with the spindle instead of projecting laterally therefrom. Murray has pointed out, however, that the normal number of chromosomes may be retained in the cell-nuclei of tumors throughout many years' propagation, and that where such reduction does occur it can be explained as the result of irregular forms of cell-division of somatic not reproductive type. The gametoid hypothesis is further discredited by the fact that transplanted ovary or testis does not stimulate malignancy.

To this brief account of the theories of cancer-formation I will add the remark that it seems that cells which have once become malignant may influence contiguous cells of the same kind and even non-contiguous cells that lie within their sphere of influence, so that they take on the same character. The process has been studied and described in a recent paper by Leitch.

Of the various theories of cancer nearly all seem to contain some element of truth, but that which attributes its origin to a disturbance in the vital balance of the epithelial and connective-

tissue elements, in my opinion, covers the most facts. The stress of civilization seems to fall heavily on the connective tissues, and the fact that among certain primitive races sarcoma is practically the sole form of malignant disease observed is of great significance. It suggests that in primitive races the tendency is for the connective tissues, and in civilized races for the epithelial elements to get the upper hand.

THERAPEUTIC OUTLOOK.

The experimental investigation of cancer is at present mainly occupied with its pathological aspect rather than with methods of treatment, although the latter are the end always kept in view. One result of immediate practical importance is the confirmation afforded to the rationality of the treatment of cancer by radium and the X-rays. Thus Bashford, Murray and Copeman, who find that exposure to radium or the injection of radio-active saline solutions sometimes leads to the disappearance of cancer, call attention to the histological identity of the processes whereby absorption is in such cases brought about and those manifested in spontaneous cure, as well as to the corresponding completeness of the immunity which ensues. "There are," says Rowntree, "undoubtedly many cases in which either a primary malignant growth or subcutaneous nodules secondary to mammary carcinoma have diminished in size or actually disappeared" through exposure to the X-rays. The effect is, he says, probably not due to direct action on the cancer cells, "for we have definite evidence of very special activity of the connective tissues, the tendency of which appears to be the inclusion and destruction of any epithelial elements present. The sequence of events is engorgement, hæmorrhage, connective-tissue proliferation, fibrosis, compression of epithelial cells, and may be summarized as inflammatory reaction with exaggerated repair.

With regard to the prospects of preventive or curative inoculation, it is important to bear in mind the limitations of the results as yet achieved. "There is no satisfactory evidence," write Bashford, Murray and Cramer, "of an induced action on growing vascularized tumors but only one against newly-introduced grafts." We are earnestly warned against the application of any of the results as yet obtained to man until such time as definite effects can be produced upon animals suffering from spontaneous as distinguished from inoculated tumors. One cannot but approve the insistence of our investigators that it is premature to talk about prophylactic or curative serums or

vaccines for clinical purposes until full control of the growth of spontaneous tumors in animals has been experimentally achieved. Still the results detailed above justify some confidence of ultimate success. As to the direction in which it is to be sought for the present, I will cite the opinion of the Superintendent of the Imperial Research Laboratories. "Further investigation is indicated," says Dr. Bashford, "in the direction of preventing dissemination of a malignant new growth by enhancing the resistance of the organism and by endeavoring to take advantage of the negative phase in the proliferation of cancer cells."—*Folia Therapeutica*.

GASTRIC SYPHILIS

Syphilitic disease of the stomach is not generally recognized in the text-books, and indeed it is usually taught that there is no syphilitic lesion of the alimentary canal between the pharynx above and the rectum below. The fact that gastric symptoms, simulating gastric ulcer, may be cured entirely by anti-syphilitic remedies, even after the more usual treatment for gastritis or gastric ulcer has failed after prolonged trial, would seem to indicate the possibility of syphilis of the stomach being a real pathological entity. A case in point has recently been recorded at considerable length by Bécélère and Bensaude in the *Bulletins et Mémoires de la Société Médicale des Hôpitaux de Paris*, 1911, p. 680. The gist of the case is that the patient was a man aged 54, who had suffered from severe epigastric pain extending over eleven years, and a more recent loss of weight of 20 kilogrammes. Examination with bismuth and the X-rays showed a definite degree of hour-glass contraction; and no remedies brought about any material relief until, when surgical assistance was being considered, it was decided to give biniodide of mercury hypodermically a trial first. Two centigrammes were given by the intra-muscular method every two days, and the patient experienced rapid relief, increased in weight, lost his pains, became able to digest almost anything; and whereas before this treatment was adopted he could scarcely walk, he is now able to go about vigorously.—*The Hospital*.

Progress of Medical Science.

MEDICINE.

IN CHARGE OF W. H. B. AIKINS, F. A. CLARKSON, BREFNEY
O'REILLY AND F. C. HARRISON.

Retention of Food in the Stomach

Kemp (S.) (*Arch. des Maladies de l'Appareil Digestif.*) This is a valuable piece of work on a useful subject about which much has been written without adequate material. The ordinary Ewald's test meal is quite insufficient to test the evacuating power of the stomach; it gauges the digestive but not the motor power; the Leube Riegel meal again is not satisfactory, and the writer prefers that of Faber, consisting of 200 c.c. of oatmeal porridge, 50 grammes of minced veal, two pieces of bread and butter, 8 stewed prunes, and a spoonful of bilberry compote; this has the advantage of being copious and appetising, while giving a suitable amount of indigestible residue and at the same time being within the range of a sick person's capabilities. Retarded evacuation or retention in the stomach is judged by withdrawal of contents at definite times after this meal has been taken. Cases are divided into three classes according to the amount of material obtained after sounding, those of "large retention" where a fair amount of the food still remains, of "small retention" where a small though microscopic amount, usually under 10 c.c. sometimes only a single fruit seed is found, and those with "microscopical debris" only, perhaps a few starch grains or vegetable fibres.

To fix his standards the writer first worked with thirteen healthy subjects absolutely without stomach symptoms. In two the stomach was microscopically quite empty three hours after a meal, though there had been abundant residue a quarter of an hour earlier, in two there was abundant residue after four hours but none at five and a half hours; the others emptied in intermediate times. In the cases where the experiments could be repeated a year later the results were the same; in the normal stomach, therefore, there is practically no stage of small retention, no macroscopic particles remain behind; it may be that

small particles start local contraction by which they are driven on. On the other hand microscopical particles may be found for twelve hours or longer, that is to say they may be retained overnight. All macroscopic particles should have left a healthy stomach in under six hours, a few microscopical particles may remain as long as twelve hours; retention beyond these lines is pathological.

As regards disease, the writer divides cases to six classes—those of cancer, ulcer, gastritis, primary ptosis of stomach, intestinal diseases, and a general, ill-defined class dyspepsia. In all of these, except the intestinal class, retention beyond five hours occurs frequently, though in different proportions, as is shown by the following table:

	Cases.	Normal Evacuation.	Retention				Per cent. of Cases with Retardation.
			5 hrs.	6 hrs.	8 hrs.	12 hrs.	
Cancer	20	2	0	3	2	13	90
Ulcer	70	14	26	11	7	12	80
Gastritis	76	35	19	11	8	3	54
Ptosis	54	18	18	9	5	0	64
Dyspepsia	143	90	37	12	4	0	37
Intest. disease..	37	35	2	0	0	0	5

It will be seen that of the 100 cases with retention above six hours, 84 belonged to the first four classes, that is to say had recognized organic obstruction. In retention above twelve hours, when continuous, that is to say found on several occasions, we may usually, but not always, diagnose structural obstruction. There was organic stricture in 20 of the 22 cases of continuous, twelve hour retention, but in the other two post-mortem examination only showed a simple chronic gastritis. In the other six of the 28 cases the large retention was transitory, and probably brought about by spasm. If the diagnosis lies between functional dyspepsia and gastric ulcer, pronounced retention favors ulcer, and if from the fasting stomach 50 c.c. of gastric juice can be withdrawn, then this supposition nearly becomes a certainty.

Small retention (that is to say after any large retention there may be has disappeared), which may simply be manifested by one seed or very small particles of food, was found in 58 of the 365 patients tested, namely, in 87 per cent. of the eight cancer cases, in 38 per cent. of the 63 ulcer cases, in 22 per cent. of the 69 gastritis cases, in 6.5 per cent. of 47 ptosis cases, in 5.6 per cent. of 143 dyspepsia cases, and in 3 per cent. of 35 intestinal cases. It is, according to the writer, not so much a sign of actual obstruction as of deficient sensibility

of the gastric mucous membrane. When large and small retention co-exist, the large is probably caused by mechanical obstruction or by changes in the muscle wall, the small by pathological alterations of the mucosa, making the elimination of small particles difficult. If small retention is found on several occasions, we may definitely say that there is organic disease of the stomach.

Microscopical retention is common in pathological as in normal conditions, and is of no value in determining insufficient motility. It is as common in intestinal as in gastric dyspepsias.—*The Medical Chronicle*.

Two Chemical Tests for Carcinoma of the Stomach

Oppenheimer (H.). *Deutsches Arch. f. klin. Med.* The importance of the early diagnosis of gastric carcinoma cannot be overestimated; the author has used the tryptophane test of Neubauer and Fischer, and also a new test of his own. The tryptophane test depends on the fact that the gastric juice in cases of gastric cancer contains a peptide-splitting ferment (Abderhalden) absent from normal gastric juice. The peptide employed in the test is glycyltryptophane. The patient is given a Boas' test-meal (18 ozs. tea, 2 ozs. of bread) on an empty stomach, and 45 minutes later the stomach is emptied. The extracted fluid is tested for blood and for bile and for tryptophane; if these are absent, 10 c.cm. of the filtered fluid are mixed with 5 c.cm. of the glycyltryptophane solution, toluene is added to keep down bacterial action, and the mixture is kept for 24 hours at 37°. A few c.cm. of the mixture are then pipetted off, a few drops of 3 per cent. acetic acid are added, and then small drops of bromine water are very carefully added from a pipette, with frequent shaking. If the gastric extract contained any peptide-splitting ferment, tryptophane is set free in the mixture, and gives a rose-red coloration with the bromine water; if not, the test gives a negative result and only a yellow color is observed. Oppenheimer finds this a fairly good test for cancer of the stomach, but not absolutely trustworthy, for it may fail in cases where operation shows that a cancer of the stomach is present. He also describes a new test of his own. The Boas breakfast described above is given, and 40 minutes later the stomach is emptied; the gastric fluid is filtered, and to a few c.cm. of it are added drops of 3 per cent. acetic acid solution. A positive result is shown by the appearance of a cloud, which disappears when either much

acetic acid or little HCl is added, but remains when the mixture is diluted with as much as 5 volumes of distilled water. This test gave results coincident with those of the tryptophane test; its application is not dependent on the absence of bile, blood, bacteria, and tryptophane from the gastric fluid. Both tests are worth trying in suspected cases of gastric cancer.—*The Medical Chronicle*.

Functional Albuminuria

The most important points connected with this very common condition are summarized by Dr. R. Hutchison in a lecture which is published in the *Clinical Journal*. In view of its bearings on life insurance, choice of career, and so on, this condition is one about which everyone in practice is bound to be called upon some day for a pronouncement. Dr. Hutchison does not believe that true functional (or cyclical, orthostatic, postural, physiological, intermittent) albuminuria is of any serious significance; in other words, he does not regard it as the precursor of kidney lesions of a more serious nature. The main basis of distinction between this functional albuminuria and that due to definite renal disease rests on two facts. The first is that functional albuminuria is not present on first rising in the morning, but comes on after being up for an hour or two. The other is that granular casts are never present, though the hyaline variety may be. Another point of distinction is that acetic acid in the cold will often give a definite cloud with a functional case, but not in organic albuminuria; this is due to the presence of mucin or nuclein compounds. Calcium lactate, which has been suggested for so many different disorders the last few years, has been tried by Dr. Hutchison and found wanting. The line he adopts is to attend to the general health and to let the albuminuria look after itself.—*The Hospital*.

Tuberculin

Ritter (*J. A. M. A.*) remarks that the use of tuberculin in the treatment of pulmonary tuberculosis in suitable cases finds its greatest exponents in a well equipped tuberculosis sanatorium. There patients can be closely observed, studied, results accurately tabulated, the effect of a regulated administration of tuberculin carefully noted, and from such histories much valuable information and proper deductions may be gathered. Not so in the treatment of ambulatory tuberculous patients. The treatment

cannot be given with any such degree of regularity as with the strict rules enforced at a sanatorium. Ambulatory patients do not always present themselves at the stipulated hour or day to receive the next regular treatment, as case histories only too well show. In a few isolated cases only is there any semblance of a systematic medication and yet with all these provisos the results here given will show that the use of tuberculin is productive of good results, even if the treatment is somewhat irregular and not properly systematized. Ritter, therefore, recommends that in all cases of pulmonary tuberculosis, carefully selected and suitable, the subdermal tuberculin medication should be given in correlation and connection with all the other approved methods of treatment.—*N. Y. Med. Jour.*

Etiology of Auricular Fibrillation

Rheumatic or choreic disease preceded auricular fibrillation in 56.6 per cent. of the cases examined by Lea, *Quarterly Journal of Medicine*, London. The most frequent lesion to which it gave rise being mitral stenosis (43.6 per cent. of cases with rheumatic history). Non-rheumatic cases presented auricular fibrillation in 43.4 per cent., the most frequent cardiac lesion being cardio- or arterio-sclerosis, 57.1 per cent. The age incidence of mitral valve disease, with or without preceding rheumatism, was 38.2 years; the age incidence of cardio-sclerosis was 53.9 years in rheumatic cases, 56.9 years in non-rheumatic. Females were more frequently subject to valvular disease than males in the proportion of 16 to 10; males were more subject to arterio- or cardio-sclerosis, 15 to 8. Of all cases of auricular fibrillation, 32.8 per cent. occurred in cardio-sclerosis, 31.3 per cent. in mitral stenosis, and 23.8 per cent. in cardiac dilation. Influenza was noted as having occurred in 39.3 per cent. of non-rheumatic cases. Electrocardiographic records confirmed, in all cases examined, the polygraphic records.—*J. A. M. A.*

Tuberculous Lesions and Radium-Therapy

At a recent meeting of the Paris Academy of Medicine, Dr. Chéron reported the results of a series of investigations carried out by Dr. Dominici and himself with reference to the treatment of deep extra-pulmonary tuberculous lesions by radium-therapy. For the past two years the authors have carried out research into

this subject by means of silver, gold, and platinum tubes containing pure radium sulphate, applied in some cases to the surface, in others deep in the tuberculous tissues. The results have been nil in some cases, but more often transitory or permanent improvement has followed, and complete cures have been obtained. It is more particularly in cases of rebellious tuberculous adenopathies, in costal caries of childhood, etc., that the new treatment has proved most efficacious. Cures have commenced after two or three applications of twenty to twenty-four hours each, at monthly intervals. The authors believe in the possibility of curing by radium-therapy certain tuberculous lesions resistant to ordinary treatment, and, without claiming that radium is a specific, they think that it can be made use of with effect as a complement to other physical agents in medicine and surgery.—*The Hospital*.

Facial Herpes in Scarlet Fever

Herpes facialis in scarlet fever is by no means uncommon, and its occurrence has been investigated by Dr. J. D. Rolleston (*British Journal of Dermatology*, vol. xxii., No. 10, p. 309). He found it in twenty-seven out of 413 cases of scarlet fever, or 6.5 per cent., which is about the same percentage incidence as that of facial herpes in influenza, and rather greater than that of the eruption in diphtheria—namely, 4.2 per cent. of 1,370 cases. Scarlet fever, therefore, comes fourth in the list of acute infectious diseases for which figures of the frequency of herpes facialis are available, following at a long distance pneumonia, malaria, and cerebro-spinal meningitis, in each of which it occurs in about 40 per cent. of all cases. Bacteriological examination of the throat did not reveal the predominance of any other organism than the streptococcus, though the possibility of pneumococcal infection was present to Dr. Rolleston's mind at the time.—*The Hospital*.

SURGERY

IN CHARGE OF E. E. KING, G. A. BINGHAM AND
C. B. SHUTTLEWORTH.

Treatment of Tetanus

In the *Berliner Klinische Wochenschrift* appears a report on a large number of cases of tetanus treated by Dr. Bacelli's method of subcutaneous injection of carbolic acid. Of ninety-four cases of severe tetanus collected from medical literature (mostly Italian) only two proved fatal. Of thirty-eight very severe cases, sixteen died. From these latter Dr. Bacelli excludes eleven cases, because the doses administered were wholly insufficient. This reduces the mortality of the latter series to 18.5 per cent. Considering that the mortality of severe cases of tetanus is 100 per cent., in ordinary circumstances these figures would appear to be highly satisfactory. Dr. Bacelli uses a 2 to 3 per cent. watery solution of carbolic acid, which is injected subcutaneously. He commences with very small doses, but as soon as the proper tolerance of the patient has been established by examination of the urine, the dose should be rapidly increased until the patient takes 1 to 1½ gramme in the course of twenty-four hours. According to the author, tetanus patients tolerate carbolic acid in surprisingly large doses, and he is led to formulate the axiom that the toleration is directly proportionate to the severity of the case.—*The Hospital*.

Forster's Operation

Resection of the posterior spinal nerve-roots for the relief of extreme pain in the corresponding parts has not been carried out extensively in this country, but some very interesting reports upon the operation and its effects are given by E. W. H. Groves, F.R.C.S., in the *Bristol Medico-Chirurgical Journal*. The conditions in which he has performed the operation chiefly have been: for the lightning pains of locomotor ataxia; for the gastric crises of locomotor ataxia; for the relief of severe gastric pains other than those due to locomotor ataxia; and for the relief of extreme spasticity in connection with lesions of the pyramidal tracts. Mr. Groves candidly admits that in certain of these

conditions the pains come back notwithstanding the operation, owing to the fact that they are of central rather than of peripheral origin. In these cases, particularly in association with the lightning pains of locomotor ataxia, the benefit likely to be derived from the operation depends to a considerable extent upon the absence of hysteria, but the operation seems to afford a most potent means of stopping the visceral crises of tabes dorsalis, and it will possibly prove of great value in this condition if applied to suitably selected cases, whilst it also cures the muscular spasm which is so extremely inconvenient in many cases of disease of the pyramidal tracts. Resection of the posterior nerve root is a very severe operation, especially when it is performed on patients who are already weak and ill, but it is borne far better than might be expected.—*The Hospital*.

Radium in Gynaecology

A communication to *Le Progrès médical Belge* for July 1st and July 15th details a number of trials of radium in various diseases of women. In dysmenorrhœa, chronic salpingitis from various causes, and in chronic diffuse pelvic cellulitis encouraging results seem to have been obtained from the use of radium of a strength varying from 500,000 to 2,000,000 units, although many of the cases reported are still under treatment and the writer refuses to commit himself definitely. He states, however, that the metal will render great service in vulvar pruritus, chronic metritis, uterine sclerosis, small fibromata, chronic urethritis, and inflammation of the glands of Bartholini. Cancer of the cervix seems to be arrested by its use and it is strongly urged that radium be used as soon as malignant disease is diagnosed.—*N. Y. Med. Jour.*

Results from Appendectomy

Scudder and Goodall (*Boston Medical and Surgical Journal*) give an analysis of results years after operation in 640 cases of appendectomy, the time varying from five to twenty-one years. They found that the patients in drained cases are more likely to have a hernia in the cicatrix following operation, while the patients of undrained cases are less likely to have a hernia in the cicatrix following operation. Ninety-four and six-tenths per cent. of the patients were in good health and were relieved by

the operation, and four and six-tenths per cent. had poor health after the operation. Analysis of the cases making up this percentage is given, showing that there was definite pathological reason for the persisting poor health. It may be concluded in general that in this series of appendectomies the operation benefited the patient, that comparatively few unnecessary operations were done, and that there were no distressing sequelæ. It has been impossible to determine, of course, with absolute accuracy the occasion for post-operative pain. There were eighty-eight patients in whom it was thought that the discomfort, which was of varying degrees of severity, might be occasioned by adhesions following operation. This group of eighty-eight cases has been secured after a very careful study of the reports of these patients, the eighty-eight cases being 13.7 per cent. of the 640 cases. The statement sometimes made that appendectomy is associated with distressing sequelæ is unfounded in this series of cases. Likewise the statement that appendectomy is often followed by no relief to symptoms is not borne out by these patients, ninety-four per cent. having been completely relieved.—*N. Y. Med. Jour.*

The Treatment of Colitis

Hale White. (*The Clinical Journal.*) The author divides the varieties of colitis into acute, membranous, and ulcerative, and distinguishes primary and secondary forms. After noting the occurrence of colitis secondary to injury, extension of inflammation from neighboring parts, Bright's disease, and pneumonia, he emphasizes its relation to intra-abdominal gross organic disorder. Thus, in malignant disease it may occur, usually behind the growth and due to the irritation of retained fæces. Also, in appendicitis, colitis may occur either secondarily, or, with the appendix, as part of a general infection. In the former case, appendectomy is desirable; in the latter, it is better to utilize this organ as a means of irrigating the larger bowel if necessary. In all cases of secondary colitis it is necessary to treat the primary cause. In the treatment of primary colitis it is advisable, in all forms, to empty the large bowel. For this, castor oil is recommended. This drug is especially useful in membranous colitis, so often due to constipation, and more frequent in women. In such cases, abdominal massage, correct abdominal support by means of stays, a plentiful diet, and outdoor exercise are advantageous. Failing castor oil, the Plombières treatment may be tried and is "undoubtedly useful." The

attempt to irrigate the bowel at home is to be deprecated. In certain cases of intractable nature, vaccine treatment is often useful. The bacillus coli is the most frequent organism, and where it can be successfully isolated, an autogenous vaccine can be prepared. It may be necessary to continue inoculations for prolonged periods.

The value of appendicostomy in the treatment of colitis is discussed. Where the above methods of treatment have failed, this operation has, in many cases been very successful. It may be performed in all varieties of colitis. It is especially of value "in cases of ulcerative colitis which have relapsed and in cases which are from the outset very severe." It is advisable to continue the general treatment in such conditions.—*The Medical Chronicle*.

The Pain Signal in Diagnosticating Appendicitis

Leven (*Presse Médicale*) states that there are gastric crises which simulate appendicitis. These crises are connected with lengthening and dilatation of the stomach when not due to pyloric spasm. Differential diagnosis may be speedily made by means of the pain signal of the author. To elicit this, the patient is placed erect before the physician, who delimits first, on the line between the umbilicus and the xiphoid cartilage, the region where pain is most acute on deep palpation. When this zone is found, an assistant places his forefingers on the sensitive point and presses down so as to elicit pain. Then from below upwards, beginning above the pubis, the physician raises the abdominal contents by profound pressure with his thumbs placed end to end on the median line till he reaches the umbilicus. The patient states when he ceases to feel pain from the deep pressure; that moment signalizes the lifting of the lower border of the stomach and demonstrates that the pain does not come from an inflamed appendix.—*N. Y. Med. Jour.*

Atropine as a Preventive of Complication from Ether

Henley (in *Dublin Journal of Medical Science*) states that atropine administered internally diminishes the secretion of bronchial and tracheal mucus, and also diminishes spasm of the muscular coat of the bronchial tubes by its action in paralyzing the peripheral nerve fibres of the vagus. There are other actions when moderate doses are administered—viz., increase in blood

pressure and increase in frequency and depth of respiration. The most important results are the diminution in the secretion of mucus and the lessening of bronchial spasm. The method of administration he has adopted is to give 0.01 grain atropine sulphate hypodermically about fifteen minutes before commencing the induction of anaesthesia, and repeating the injection if the patient shows any signs of mucus, however slight. He has never seen any trouble or complication arising out of the administration of atropine, and the results, as far as mucus secretion is concerned, have been satisfactory. The atropine in all cases diminishes, and in most cases inhibits, the secretion of mucus, and the anaesthetist is spared the necessity of frequently swabbing out the throat, to the patient's, the surgeon's and his own comfort. The recovery of the patient is much more rapid, and post-anaesthetic sickness is uncommon, a result which he thinks may be attributed to the absence of mucus, the presence of which in ordinary cases is responsible for a good deal of vomiting, the secretion having been previously swallowed.—*N. Y. Med. Jour.*

Parathyroid Implantation in the Treatment of Tetania Parathyreopriva

Brown (W. H.). (*Annals of Surg.*). This is an instructive account of a case of tetany following thyroidectomy (for Graves' Disease), where no attempt had been made to save the parathyroids. The symptoms came on four days after the operation, and were treated at first by calcium lactate and then by subcutaneous injections of parathyroid emulsion (made from fresh ox parathyroids), which, however, only gave temporary relief. The "fits" continued, and the heart was troublesome. Two ox parathyroids, which had been preserved at freezing point, were next implanted. Great improvement resulted, but after eleven days the symptoms shewed signs of returning. A monkey's thyroid and parathyroids were then transplanted. For sixteen days there was very little stiffness, then the symptoms again increased. Human parathyroids were now implanted, and the patient has since steadily improved.—*The Medical Chronicle.*

OBSTETRICS AND GYNAECOLOGY

IN CHARGE OF ADAM H. WRIGHT, K. C. M'ILWRAITH, FRED.
FENTON, AND HELEN MACMURCHY.

Treatment of Eclampsia

Dr. Hastings Tweedy had 29 cases in sequence, covering a period of two years and nine months, without a death. His treatment was as follows: On admission, the patient was given a half-grain of morphine hypodermically. The stomach was washed out, and a purgative poured through a tube. A catheter having been passed, the patient was then turned on her back and the lower bowel and rectum thoroughly washed out with a solution of bicarbonate of soda. Submammary infusion was used if necessary.—*Brit. Med. Jour.*

Placenta Praevia

Schauta discusses the treatment of placenta praevia. The treatment of rapid extraction of the child in central placenta praevia has been superseded by methods in which hæmorrhage is controlled by pressure, either Braxton Hicks' method of version and bringing down a foot, or by the use of Charpentier's metreurynter. The latter method seemed at first likely to supersede that of Braxton Hicks, because Charpentier's bag could be passed through the placenta in small compass with less injury to the placenta and less danger to the child. The danger of the hydrostatic dilator is, however, one of danger to the life of the mother from the profuse hæmorrhage which may occur when the bag falls out of the uterus, and Braxton Hicks' method is therefore to be preferred. Schauta opposes Cæsarean section, in view of the danger to the mother, who is already enfeebled by loss of blood when the diagnosis is made, and on the poor chance of life of the child for whose benefit the operation is to be undertaken. On looking through his records for the last ten years, he finds that 88 out of 438 cases of placenta praevia were central. Of these 63, or 71 per cent., had already been examined outside the hospital, and even though Cæsarean section were the rule, such cases could not, in the author's opinion, be suited for it, because of the impossibility of ensuring asepsis where an outside examination has been made; 12 of the 88 cases died; 8 of them had

been examined outside, and the remaining 4 were so enfeebled by loss of blood that Cæsarean section was contraindicated. Thus no single case was suited for the treatment. In the present year, however, one such case presented itself. The cervix was so long and narrow that Braxton Hicks' method was not available. Cæsarean section was successfully performed; the child was living and the woman made a good recovery.—*Wien. Med. Woch.*

Puerperal Sepsis

Vaccine therapy has during the last few years been used with varying success, but at the present time the whole subject of treatment of sepsis by vaccines and serums may be considered as still in the very early experimental stage.

The conclusions of the Committee on Vaccine Therapy of the American Gynæcology Society, consisting of Williams, Cragin and Newell were in part as follows:

Vaccine therapy is undoubtedly a valuable remedial agent in local infections due to the tubercle bacillus or staphylococcus, less so in local infections due to other pathogenic bacteria, while there is considerable doubt as to its efficiency in acute general infections.

In infections of the urinary tract, especially those due to the colon bacillus, it sometimes results in symptomatic cure, but rarely relieves the bacteriuria. The scanty reports concerning the pyelitis and the pyelonephritis of pregnancy indicate that vaccine therapy is no more efficient than the usual treatment.

In certain cases of endometritis, it appears to reinforce the curative influence of curettage. The reports concerning its use in pelvic inflammatory disease are too scanty to justify conclusions.—Broadhead, *Am. Jour. of Obst.*

Serum Diagnosis of Pregnancy

Mosbacher (*Deutsch. med. Wochenschr.*). There is good ground for the view that many of the accidents of pregnancy are anaphylactic phenomena, due to absorption by the mother of fetal proteid substances. The writer has investigated this problem by means of animal experiment. If a watery suspension of guinea-pig placenta be injected into a non-pregnant guinea pig, the latter remains unaffected. A second injection, at a proper interval, however, promptly causes the animal's death, showing that it had been sensitized by the first injection. Pregnant guinea-pigs be-

have quite otherwise. In them a single injection usually proves fatal, always in early pregnancy, less and less so the more advanced the pregnancy. Investigation showed that, from the very beginning of pregnancy, these animals had become sensitized to placental proteid, but that, as pregnancy advanced, antibodies were formed which in advanced pregnancy sufficed to protect the animal.

These observations suggest the possibility of a serum diagnosis of pregnancy. By means of the so-called epiphanin reaction it is possible to determine whether a specimen of serum comes from a sensitized human being or animal as the case may be. In brief, the method consists in mixing some of the serum to be examined with an emulsion of the tissue in question (in this case human placenta), and determining the change, if any, in the surface tension. The test can only be carried out by a specially trained man, but that is equally true of the Wassermann reaction. The time may come when the serum diagnosis of pregnancy will be as simple a matter as the serum diagnosis of syphilis. The test will be especially valuable as it will be most strongly marked in the earliest weeks of pregnancy, when all other signs fail us.—*Interstate Med. Jour.*

The Use of Hot-Water Vaginal Injections

James Hawley Burtenshaw (*N. Y. Med. Jour.*) thinks that this most valuable adjunct in the treatment of pelvic disease has fallen into disrepute through a misunderstanding of its proper method of application. The fault usually lies in the failure of the physician to give sufficiently minute directions. The principles underlying the use of the vaginal douche are to be borne in mind. While a douche for mere cleansing purposes may be used at varying intervals and consist of a small amount of moderately warm water administered in any position most convenient to the woman, such douches are of no therapeutic value. The initial effect of water at a temperature of from 105° to 120° F. upon the tissues is to dilate the blood-vessels, congesting the parts, while the secondary effect is that of contraction, driving out the excess of blood and lessening the congestion. Consequently the use of two quarts of hot water, which will flow through an ordinary tube and vaginal nozzle in exactly two minutes, can do no more than add to pelvic congestion already present. In cases where it is desired to *increase* the amount of blood in the pelvic vessels such a douche would be of service, but where pelvic con-

gestion already exists harm must follow. At least three gallons of water as hot as can be borne (from 107° to 120° F.) must be used for such douche, and this should be taken twice daily, except for two days preceding and two days following and during the menstrual flow. The patient must lie flat on the back, with hips higher than the shoulders, and should rest for at least half an hour after each douche. The douche may advantageously be taken in the bath tub, to allow of the outflow of the large quantity of water. Or, where there are few conveniences, two boards, a few inches apart, may be placed across an ordinary wash tub, the woman's hips may rest on the boards, while her head and shoulders are supported on a chair.

Such douches are of great value in acute and chronic metritis, in subinvolution, in perimetritic inflammation and in pelvic exudations. Leucorrhœa is usually checked by the toning up of the vaginal and uterine mucosa by the plain hot water, but where it persists 1 tablespoonful of the following mixture may be added to the last quart of water in the douche bag:

R. Powdered alum	
Zinc sulphate	
Sodium biborate	
Carbolic acid	each 1 ounce
Water	6 ounces

In elytritis, characterized by a discharge of acid reaction containing bacteria and membranous shreds, one teaspoonful of bicarbonate of soda may be added to each quart of water. Astringents must not be used in these cases. Bichloride of mercury, lysol, or creolin should not be constantly employed in the ordinary therapeutic douche, as the hot water greatly increases the absorptive power of the mucous membrane and renders the frequent use of such antiseptics dangerous. Healthy pregnant women should never employ large hot-water douches, as they reduce the bactericidal power of the vaginal secretions. Reclus, of Paris, prefers the use of hot enemata in pelvic inflammations. He uses the water at a temperature of from 122° to 131° F. As large a quantity as can be tolerated is slowly introduced into the rectum, and retained thirty minutes. The writer has found the discomfort attending such injections too great to be tolerated by most patients. In addition to the use of these large hot-water douches for local pelvic inflammations, they act as a general systemic tonic in cases of general debility, and are a valuable adjunct to other methods of treatment.

Editorials

THE RIGHT HON. JOSEPH CHAMBERLAIN

In our last issue we made reference to Mr. Chamberlain, but desire now to speak in greater detail respecting the great work he has done for the Empire, especially from a medical point of view.

“It is not for us,” said Dr. Maclean, the Chairman of Representative Meetings of the British Medical Association, “It is not for us to enter largely into the matters that concern political distinctions, but it is for us to claim the common heritage of the British Empire, in recognizing in the Right Hon. Joseph Chamberlain, a citizen of Birmingham and a statesman of superb ability and energies, who has served well and done well for his country.” It was in the University of Birmingham that the annual meeting of the British Medical Association was held, and it was to the first Chancellor of the University, in the person of Mr. Chamberlain, that the highest honor in the gift of the Association, that of honorary membership, was unanimously and enthusiastically given. Few, indeed, could better deserve such an honor. His services to the Empire and the profession, both in the Local Government Board in 1886, and as Colonial Secretary from 1895 to 1903 will never be forgotten by the student of public affairs. Nor has there been a minister, from the time of William Pitt, who has done more for the Empire. His founding the London School for Tropical Medicine is only one instance. Another is the

discovery he was the first to make of the value of the School-Child as a Sanitary Reformer. It was he who, in a letter to the governors of the Crown Colonies, suggested that the main facts of the mosquito-malaria theory should be taught to the teachers of the elementary schools in these colonies, and that a series of simple object-lessons should be given by them to impart this information to their pupils. This was about 1896, and in a few weeks from the date of the letter, native children in Sierra Leone and elsewhere were searching puddles and swamps for "wigglers" and teaching their parents the principles of preventive medicine. As Mr. Neville Chamberlain, who represented his father on this distinguished occasion, said of him, "The certain benefit which had been, and would continue to be, conferred upon humanity by medical science always appealed strongly to his energy. The results which had been achieved by the London and Liverpool Schools of Tropical Medicine, and other schools following in their footsteps, had far exceeded even his father's most sanguine anticipations. They had opened up a new field of medical science, and, like irrigation in the desert, they had added new tracts to civilization."

THANKS TO DR. BRAY

At the last meeting of the Ontario Medical Council, Dr. Spankie, in proposing a vote of thanks to the Registrar, Dr. Bray, spoke as follows:

Mr. President,—I have been requested to move a resolution of congratulation to our Registrar, and of praise of his work that he has performed during

his tenure of office. Dr. Bray has had a very distinguished life in the medical profession, and he has occupied all the high positions in the power of the profession to bestow upon any man. He came as Registrar of this Council at an advanced age, and has performed the duties most satisfactorily. He succeeded a very able man; one who had spent a large portion of his lifetime in the office, and we hardly noticed the break from the services of Dr. Pyne and the continuation of these services by Dr. Bray, himself a member of the Council for 27 years. He has given us satisfaction; and in view of the fact that we have recommended a reorganization of this Council, and as this reorganization may or may not take place before we meet again, it is quite appropriate that we should place on record our appreciation of the services rendered by Dr. Bray. I therefore heartily move that this Council tender its thanks to Dr. Bray for the efficient manner in which he has acted as Registrar.

The motion on being seconded by Dr. Jarvis was carried unanimously by the Council.

PUBLIC HEALTH EXHIBIT

The Public Health Exhibit at the recent Canadian National Exhibition was a very admirable one, and we are glad to note was very highly appreciated by both the profession and the public in attendance. One of the visitors especially interested was Earl Grey, the Governor-General, who made a special request that certain features of the exhibit would be exhibited in Montreal and Ottawa in the near future.

In addition, a very interesting course of lectures was delivered in the newly-erected Woman's Building. At each meeting held at 3 o'clock in the afternoon interesting moving pictures were shown, with the object of demonstrating the evils of overcrowding in small districts the contrast between dirty and clean methods in the handling of milk; the dangers resulting from improper feeding of infants, and the evils of the filthy house fly, etc., etc.

The lectures were generally short, crisp and interesting, delivered by the following: Prof. Knight, of Kingston, on "The Medical Inspection of Schools"; Dr. Amyot, of Toronto, on "Purification of Water Supplies"; Dr. Hastings, M.H.O., Toronto, on "Home Sanitation"; Dr. James Roberts, M.H.O., Hamilton, on "The Prevention of Typhoid Fever"; Dr. George Porter, of Toronto, on "The Prevention of Tuberculosis"; Dr. W. T. Connell, Kingston, "Rural Water Supplies"; Dr. Drake, Chicago, "The Housing Question"; Dr. Hewitt, Ottawa, "The Fly Question"; Prof. Dean, Guelph, "How to Procure Good Milk"; Dr. Helen MacMurchy, Toronto, "Infant Mortality"; Dr. W. H. Doherty, Toronto, "The Necessity for Dental Inspection of School Children."

In connection with this very creditable, indeed magnificent, exhibit, we desire to offer our hearty congratulations to Dr. W. J. S. McCullough, the Chief Medical Health Officer for Ontario, on the wonderful success which attended his efforts to teach the public so many important and practical points in connection with the prevention of tuberculosis and many other varieties of disease.

THE PROFESSION OF MEDICINE

It would appear that in all parts of the civilized world the number of those entering the medical profession are increasing from year to year. The *British Medical Journal*, in its Educational Number, takes rather a gloomy view of the situation. It expresses the opinion that the prospects of most of those now entering the profession are even more uncertain than ever before. The uncertainty is accentuated by the nature of the scheme embodied in the National Insurance Bill introduced by Mr. Lloyd George. "It is proposed to impose upon members of the medical profession, for the annual sum of four shillings a head—little more than the State charges for the privilege of keeping a dog—the duty of giving medical attendance to all persons occupied in industrial occupations and a very large proportion of the rest of the population. So small was the appreciation of the value of medical service, and so low the estimate of the incomes earned by medical men, that the minister seemed honestly to have believed that in making this proposal he was conferring a boon on the medical profession. It is unfortunately true that a system of contract practice had been allowed to grow up under which the annual capitation fee of four shillings, or even a smaller sum, was accepted."

We have more than once referred in former issues to some of the extraordinary features of this remarkable Bill. It seems that the Government is endeavoring to make, accept and legalize that very obnoxious system known as contract practice.

HEAT AND LIGHT FOR TORONTO UNIVERSITY

The new central plant for heating and lighting the buildings of the Toronto University, which has been under construction for over a year, is completed. It is said to be the largest plant of its kind in Canada. All the buildings, from College Street to Bloor Street, including the Victoria College and School of Domestic Science, will be lighted and heated from this plant. Formerly most of the buildings were heated by separate furnaces, and now they are all connected by underground conduits. The plant comprises four large furnaces of 400 h.p. each. It is expected that in cold weather these furnaces will consume 20 tons of coal daily. The ordinary working staff will now consist of six men instead of more than a score of engineers, firemen and helpers. The saving in wages alone is estimated at \$8,000 a year.

AUTOMOBILE SPEEDING

There is considerable difference of opinion in the minds of both the medical profession and the public as to the rules which should govern the speed of motor cars.

In the first place it is exceedingly difficult to fix or name a definite time limit which is anything like suitable for all districts. While 30 miles an hour or more is quite safe on good straight roads in country districts, 10 miles an hour is quite unsafe on busy streets and in crowded parks. We understand it has been decided in France that there shall

no longer be a definite speed limit. Dangerous speeding will be forbidden by the law, but what "dangerous" means will depend largely on the judgment of the officers of the law.

A question frequently asked is the following. Should a surgeon be allowed to exceed the limit when responding to a very urgent call? Magistrate Ellis, of Toronto, in answer to such a question, replied very briefly that doctors, like other persons, must obey the laws. While we think a little latitude might be allowed to physicians in cases of emergency, we must remember that the dangers of over-speeding along streets crowded with pedestrians—men, women and children—is exceedingly dangerous, and the members of our profession should be very careful about claiming exceptional privileges under such circumstances.

The 24th Annual Meeting of the American Association of Obstetricians and Gynæcologists was held in Louisville, Ky., September 26, 27 and 28, under the Presidency of Herman E. Heyd, of Buffalo. Dr. Heyd is a Canadian, born in Brantford, Ont., and graduated M.D. from McGill University in 1881. He has been for many years one of the leading surgeons of Buffalo, and is well known to the profession in this part of Canada.

The Seventh International Congress of Dermatology which was to have been held in Rome during September has been postponed until the middle of April, 1912, owing to the fact that many of the Foreign Committees found the month of September very unsuitable for their members.

Personals

Dr. Gibb Wishart returned to Toronto from Europe and resumed practice Sept. 16.

Dr. Murray McFarlane will remove to his new residence, 190 Bloor Street East, early in October.

Dr. W. H. B. and Mrs. Aikins will spend two months in France, returning the end of November.

Dr. W. H. Robertson removed on September 1st to his new residence, on the corner of Bloor Street and Concord Ave.

Dr. Charles O'Reilly was in Ireland when last heard from. He expected to sail from London to Montreal October 5th.

Dr. Frederick L. Strathy, of Birmingham, England, spent a few weeks in Toronto, in the months of August and September.

Dr. Brefney O'Reilly returned from the Maine coast, where he has been summering, and resumed practice the middle of September.

Dr. Hervey Jackes, who has spent the last two years in St. Luke's Hospital, Chicago, is returning in October to take up his practice in Deer Park, Toronto.

Dr. Jeane Sproule, after obtaining the "double qualification" in London last January, spent some months on the Continent, and returned to Toronto Sept. 16th, and after a stay of a couple of days here went to visit friends in Western Ontario. She expects to commence practice in Toronto—diseases of the eye, nose, ear and throat—in the early part of October.

Book Reviews.

Makers of Man; a Study of Human Initiative. By CHARLES J. WHITBY, M.D. (Cantab.), with forty-seven half-tone and other plates. New York: Rebman Company, 1123 Broadway. Cloth, \$3.

From a close study and investigation of the lives of a large number of the world's "great men," the author draws general conclusions as to the physical, mental, and moral characteristics which constitute the distinguishing features of those who have attained greatness. He divides men into four types—the man of action, the æsthetic, the intellectual, and ethical. The physician, to whom knowledge of his fellow-men forms quite as large a factor in bringing success as does his scientific skill, should find this book of very great interest and profit. He will find the characters of Harvey, Darwin, Bacon, Sir Isaac Newton and other scientists minutely dissected, while the study of Cæsar, Dante, Cromwell, Goethe and the many others discussed here cannot help but be a great inspiration. The illustrations are very fine, and there is a well-arranged bibliography added. In one's leisure hours one could not occupy oneself with more pleasurable and profitable reading than the volume before us.

Handbook of Treatment for Diseases of the Eye. By DR. CURT ADAM, Assistant Surgeon in Imp. University Clinic for Diseases of the Eye, Berlin, with preface by PROF. VON MICHEL, Berlin; translated by William George Lyon, M.D., F.R.C.S., Ed., and E. M. Lithgow, M.B., F.R.C.S., Ed., from 2nd German edition (1910), with 36 illustrations. New York: Rebman Company, 1123 Broadway. 260 pages. Price, \$2.50.

This book presents very concisely the relative value of the different drugs and therapeutic measures used in ophthalmic practice, as well as much valuable information for both general surgeon and ophthalmologist regarding diagnosis, especially that to be obtained without the aid of the ophthalmoscope.

The chapters on syphilitic and tuberculous conditions of the eye are particularly instructive.

Perhaps the most valuable part of the book for the general surgeon is that devoted to injuries to eyeball and orbital region. The diagnosis and treatment of these injuries, as well as their possible sequelæ, is given in a very clear and concise manner.

A chapter of one hundred and fifty prescriptions is given, covering treatment for most eye conditions.

Altogether, the book is a very excellent and handy book of reference regarding ophthalmic therapeutics.

Progressive Medicine. A quarterly digest of advances, discoveries and improvements in the medical and surgical sciences. Edited by HOBART AMORY HARE, M.D., Professor of Therapeutics and Materia Medica in the Jefferson Medical College, Philadelphia; Physician to the Jefferson Medical College Hospital; assisted by LEIGHTON F. APPLEMAN, M.D., Instructor in Therapeutics, Jefferson Medical College. Vol. III. Sept., 1911. Lea & Febiger. Philadelphia and New York. 1911.

The contents of this volume are: Diseases of the Heart and Lungs, Dermatology and Syphilis, Obstetrics and Diseases of the Nervous System. Always full of the very latest in every department, this number of *Progressive Medicine* seems better than ever. One can read in half an hour all the advances during the past year in any particular subject he may be interested in, and at the same time have at his command enough references to make him complete master of the matter at hand, should he care to follow it further. This work is the very best desk book in the English language.

The Essentials of Food. By DONALD STEWART, M.D., London. John Bale. Sons & Danielsson, Ltd. 1911.

Written in simple language and with abundant explanations, this is a book that will appeal to the profession and laity alike. A large number of tables dealing with the nutritive values of the various foodstuffs, such as dairy products, eggs, animal and vegetable foods are inserted. There is also a chapter dealing with standard diets. The author here is a disciple of Chittenden, although other authorities are introduced. Altogether, the book will be found a most useful and convenient one as an introduction to the complex science of dietetics.

Manual of the Diseases of the Eye, for Students and General Practitioners. By CHARLES H. MAY, M.D., Chief of Clinic and Instructor in Ophthalmology, College of Physicians and Surgeons, Medical Dept., Columbia University, New York; Attending Ophthalmic Surgeon to the Mt. Sinai Hospital, New York, etc., etc. Seventh edition, revised. with 362

original illustrations. New York: Wm. Ward & Co. 1911. Price, \$2.

When one glances through this book again, there is no longer any wonder that it has gone through so many editions, and has been translated into so many languages. As a book for students and general practitioners, it stands without a peer. The marvel is that any publisher could get up such a volume, with so many colored plates—an atlas in themselves—at such a reasonable price.

The popularity of Merck's Manual, fourth edition, which has just been published is such that Merck & Co. have decided to offer it for distribution in Canada upon the same terms as those obtaining in the United States. Hereafter, then, any physician, pharmacist or chemist in Canada may secure a copy of the book by making application, stating his profession or business and enclosing the forwarding charges of ten cents (in silver). Merck & Co., 45 Park Place, New York.

Plaster of Paris, and How to Use It. By MARTIN W. WARE, M.D., N.Y.; Adjunct Attending Surgeon, Mount Sinai Hospital; Surgeon to the Good Samaritan Dispensary; Instructor of Surgery in the New York Post Graduate School. Second edition, revised and enlarged. Price, cloth, square form, \$1.25. De luxe, leather, \$2.50. New York: Surgery Publishing Co.

This volume is small, 100 pages, but the amount of material that it contains is much more valuable than many volumes of greater size. The abuse of the plaster of paris casts from lack of knowledge in making application is great. This little book before us, which deals with the history, application and pitfalls, removes the cause of such ignorance. The illustrations are clear and well-made, and illustrate the point at issue. It is a volume that should be in the hands of every practitioner, and its reading is great pleasure, and we heartily recommend it.

Obituary

ALEXANDER STEWART, M.D.

Dr. Stewart, who for many years practised medicine in Palmerston, Ont., died in Toronto Sept. 8th, aged 66.

GEORGE WYLD, M.D.

Dr. G. Wyld died at his home in Sherbrooke, Sept. 7th, aged 56. He graduated M.D. from Victoria University in 1882, and was for a number of years surgeon to the Grand Trunk Railway.

ALFRED POOLE, M.D.

Dr. Poole, who graduated from McGill in 1893, and practised in Vancouver from that time until the present year, died at St. Paul's Hospital, Vancouver, July 20th.

E. T. ADAMS, M.D.

Dr. E. T. Adams, of Toronto, died suddenly Sept. 17th. He had been in active practice altogether 43 years, including 25 years in Toronto. He was one of the Homœopathic representatives in the Medical Council from 1902 to 1910.

CHRISTOPHER M. LAING, M.D.

Dr. Laing, one of the best-known physicians of Owen Sound for the last thirty-six years, died at his home in that city, July 26th. He was the youngest son of Dr. William Laing, for many years a surgeon in the Royal Navy, and graduated M.D. from McGill in 1875.

HOWARD M. CHURCH, M.D.

Dr. H. M. Church died at the Montreal General Hospital July 31st. He was a son of the late Dr. Howard Church, of Aylmer, Que., and graduated M.D. from McGill in 1896. After doing post-graduate work in Europe he commenced practising in Montreal in 1898. He was a member of the teaching staff of the McGill Medical Faculty for ten years, and also took great interest in military matters, having attained the rank of Surgeon-Major in the Artillery.

Selections.

A Case of Juvenile Atherosclerosis

Simon (M.). *Hygiea*, Stockholm: The author gives a résumé of the modern views of atherosclerosis as it occurs in the old and in the young. In most of the recorded cases, juvenile atherosclerosis has occurred in connection with syphilis, and has been most marked in the aorta: this was not so in Simon's patient, a tuberculous ill-developed youth of 17, who died of exhaustion, with marked tuberculosis and bronchiectasis of both lungs, amyloid spleen, chronic parenchymatous nephritis and a great deal of atherosclerosis of the medium-sized arteries. The tuberculosis appeared to date from an attack of pleurisy and inflammation of the lungs at the age of 12—13; the boy had had a chronic cough since, but had been able to work in a shop till 16; he was in hospital, mainly in bed, for the last 13 months of his life. He showed no signs of syphilis, nor could any evidence of syphilis in his family be obtained; the mother had had six children, but no miscarriage. At the obduction, in addition to the details given above, it was found that the suprarenal glands were normal; the aorta showed only a few small raised atheromatous patches, as did the innominate, pulmonary, carotid, celiac, sub-clavian, renal, and splenic arteries. But the medium-sized arteries, such as the femorals, were moniliform, normal soft segments alternating with knotty or spindle-shaped calcified portions. The smaller arteries (coronary, gastro-epiploic, radials, profunda femoris) were similarly involved, and in places almost or even quite obliterated. Full details of the microscopical appearances of these and other arteries are given; all the changes commonly met with in the common senile atherosclerosis were found in this patient's smaller arteries, from the earliest to the most advanced—from the first formation of new elastic fibres from the inner side of the internal elastic lamina and fatty degeneration, to the calcification of degenerated tissue on either side of the internal elastic lamina and in the media. The calcification spread along the media, so that certain sections gave the impression that isolated patches of calcification occurred in the media. Compensatory thickening of the intima was seen where the media had given way. Simon remarks that this extensive atherosclerosis produced few symptoms clinically. Over 80 references to the literature are given.—*The Medical Chronicle*.

The Study of Eugenics

The modern extension of the doctrine of natural selection and its development upon the sociological side has culminated in the birth of the new science of eugenics. According to the late Sir Francis Galton, it may be defined as the science which deals with all the influences that improve and develop the inborn qualities of a race, but the "Father of Eugenics" was not content to leave the improvement of society to the doubtful operations of the law of the "survival of the fittest." He would rather substitute a distinctly human, rational and scientific selection, whereby only the growth of the best stocks may be encouraged. The proper correlation of the enormous mass of detail associated with such a study, not to mention the sober valuation of mathematical statistics, necessarily demands a special mental training. Recent controversy upon the eugenic relationship of alcoholism to degeneration in the offspring has shown how hard it is accurately to estimate the true value of a statistical inquiry, especially when it is remembered to what extent such figures must be affected by racial, climatic, and other influences. The recent appointment of Professor Karl Pearson to be the first occupant of the newly-established Chair of Eugenics in the University of London cannot fail to give the greatest satisfaction to all who see in the new science fresh hopes for the future of the race, and the Senate has shown its wisdom in selecting one who for many years has supervised the Biometric Laboratory at University College and the Francis Galton Laboratory for National Eugenics. We shall look forward expectantly to the author of "The Grammar of Science" not only for more light upon a subject which has such important socio-medical bearings, but also for the organization of the study of eugenics upon practical lines.—*The Medical Press*.

Chronic Nicotine Poisoning from Chewing Tobacco

Tanberg (A.). *Norsk Mag. f. Lægevidenskaben*, Christiania: The patient, a sturdy but pale man of 40, had suffered on and off for six years with attacks of œdema of the legs, sometimes with albuminuria and sometimes without; and had been treated for renal disease, repeatedly lying in bed 6—8 weeks on a milk diet. The urine was normal when he consulted Tanberg; his chief complaints were of swelling in the legs, morning vomiting and morning loss of appetite, frequent attacks of obstinate mucous diarrhœa. On examination the viscera seemed

normal; the knee-jerks were small, the pupils reacted well to light and to accommodation, the legs were œdematous up to the knees, and there was some loss of sensation on the inner sides of the thighs. The pulse was 90, and sometimes irregular; the patient made no complaint of headache or of pain anywhere, and did not suffer from palpitations. Three weeks later he was worse, with œdema up to the lower abdomen and of the fingers, perhaps in the face also; sensation was lessened in the legs, which were tender in places on deep pressure, and there was definite weakness of the legs. The knee-jerks were increased, the left cremasteric reflex was absent, the pupils were normal. There was much nausea, with vomiting if solid food was taken; the bowels were loose, the urine free from albumin, cardiac palpitations did not occur, the pulse was 92, the patient slept ill. No history of syphilis could be obtained; the patient was knocked off his alcohol—a pint of beer per day—and his tobacco—one or two cigars a day; he was thirsty, and passed 4—5½ pints of water per diem. The diagnosis of peripheral neuritis of unknown cause was made. He was put on a fluid diet; and then Tanberg found out by accident that he was in the habit of chewing about 16 inches of thick tobacco-rope, weighing 40 grams, every day. Examination with the perimeter shewed that the nasal field of both eyes had diminished acuity of perception for red. He was forbidden to chew tobacco, and improved rapidly at once, the appetite returning in two days, his pulse falling from 92 to 60 in four days, the œdema vanished in a week. The paresis and loss of sensibility disappeared in three months completely; the patient had given up his beer for only three weeks, while he took no tobacco at all for the three months; and Tanberg argues that it was the tobacco that caused all his signs and symptoms. A few weeks later he began to chew tobacco again, and in a fortnight œdema of the left leg returned, with tenderness and with reddened tender patches, in which sensation was diminished—due to peripheral neuritis; nausea, diarrhœa, sleeplessness had returned, but the knee-jerks were present, and there was no paresis. The patient gave up tobacco again, and recovered. Tanberg remarks that the only cardiac symptom in this case took the form of an anginal attack, stenocardia, two days after tobacco-chewing had been given up for the first time. There were none of the mental symptoms—depression, hallucinations, mania—observed by Kjellberg as the result of excessive tobacco-chewing.—*The Medical Chronicle*.

The Canadian Practitioner and Review

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Original Communications

PRESIDENTIAL ADDRESS

BY DR. N. A. POWELL.

President Academy of Medicine, Toronto.

First, before all else, it becomes my pleasant duty to thank the Fellows of the Academy for placing me in the position I now occupy.

The honor came unsought, and is for that reason all the more appreciated. I count it no light thing to have been thought worthy to follow those recognized leaders of the profession who have been previously accorded the highest office in your Society. The evolution of the Academy from the societies, by the union of which it came into existence, is in line with medical progress the world over. In all great centres of civilized population the day of the small Medical Society, of the proprietary medical school and of the ill-equipped hospital is passing or has already passed.

Modern life, with its complexity of needs, has made it imperative that bigger and better organizations should replace those which formerly sufficed. To be bigger is not of necessity to be better. While in the changes that are taking place much has been gained, some things of value have been lost. Nelson behind wooden walls needed a generation to gain for England what Togo did for Japan in one morning's use of what modern science had placed at his command.

The Rolph School here, the Woman's Hospital under Sims and Emmett, and the Royal Infirmary under Syme did splendid and long-to-be-remembered work, but just as it has become impossible for any one man to be a universal specialist, so has it

come about that no small school, hospital or society can by any effort, however able and however well directed, meet all needs.

“Our own art is too vast and too complex
For one man alone to accomplish its purpose
And hold it shut fast in his hand.”

The capital city of Ontario is rapidly approaching the half-million mark in population. Its people have doubled in numbers within the last decade, and its future as one of the great cities of the continent is already assured. On us rests the obligation of seeing that in things medical its progress shall keep pace with its advancement along other lines. A few years ago the four medical societies referred to were doing excellent work in Toronto and making the name of our city and of our country widely known. They voluntarily gave up their autonomy in order that by uniting forces one strong and progressive Society should come into existence. It is to the lasting credit of the men who composed these societies that they recognized the trend of modern progress and were content to lose their corporate individuality in promoting a scheme for the more comprehensive unifying of professional interests.

“The intuition of unity is the end of philosophy,” wrote Plato.

Already they are receiving their reward in the kindlier feeling that pervades the atmosphere in which we live. Men have been brought into closer relationship one with another, and warm friendships are replacing jealousies and suspicions which formerly were too much in evidence.

The Academy, with its great and growing library, should be the means for bringing out and of making known all that is best amongst us. A medical school is chiefly of interest to its staff and its students, and a hospital to these and to the patients who fill its wards. The Academy has no such limitations. Here all meet on a level, and one rises above another only by virtue of the better work he is able to do, or the better spirit he displays in doing it. A strong association can afford to assume a sedentary posture on any member who prefers to split hairs rather than to split differences, and whose temperamental bias is toward carping rather than helpful criticism. It would savor of the Pharisee to claim that we are free from all such elements of disturbance, but certainly with us they are minirical. Nine years ago, when President of the Ontario Medical Association, I ventured into the realms of prophecy,

and said with regard to certain schemes for improvement which were then very much *in nubibus* that "While in the past professional jealousy had been so keen, and controversy so bitter that success would have been hardly a possibility, now *Laus Deo* we know each other better and out of mutual respect can come united and successful action. True, we are given to criticizing each other a good deal; but, with rare exception, this is in the spirit of rivals rather than of antagonists. Old animosities are dying out and are not being replaced.

"The teeming future,"
Glorious with visions of a full success,"

holds for us a grand, united and splendidly equipped school of medicine, doing for the students of a coming time what in an imperfect and patchy way we are striving to accomplish now. I have faith in that future and in the men who shall sway its destinies, and believe that with absolute fairness to all real interests the wisest course can be found and followed."

Do I make an undue claim in saying that the forecast of the future then given was at least as accurate as the average of recent political forecasts in what is geographically the larger half of North America?

The boards governing our larger hospitals are fully awake to the needs of the present and of the future. The new Toronto General and the Western Hospitals are engaged in extensive building operations. St. Michael's is adding a new wing to its present building. Bearing the name of a Saint, who, if my memory serves me rightly, is mentioned but four times in the Bible—and every time fighting—we shall expect this hospital to keep well in the foreground.

The Hospital for Sick Children is always adding to its facilities, and Grace, we are hoping, will soon take similar action.

It may well be a matter for mutual congratulation, that these various institutions through their boards and staffs aided each other in obtaining civic and other grants. This is as it should be, but not as it would have been under conditions that formerly were present with us. I yield to no one in my admiration for what our predecessors, in the face of untold difficulties, were able to accomplish. Fortunately we may honor them and honor the work they did, without being tied in any way to the precedents they established. There were giants in those days! Rolph and Widmer, Bovell and Beaumont, Hod-

der and Richardson, were men of whom any city might be proud.

But great lights by their very intensity cast deep shadows, and these shadows are the occasion of much stumbling. Less brilliant globes make our streets as safe by night as by day, although no one of them can be said to far outshine its fellows. That we have come closer together and are more mutually helpful is surely true, but still it would be premature to hold that the medical millennium is even within measurable distance of No. 13 Queen's Park Avenue.

Where we stand, however, is not nearly as important as the direction in which we are moving. To-night I want to speak to you regarding one line along which we may soon and rapidly advance. The members of this Academy are, I feel sure, broad enough to permit me to do this without being charged with giving undue prominence to a single institution, or to my own part in what is being done or to be done.

Demosthenes made his hearers forget the speaker in the interest he led them to take in his subject, but I am as far removed in skill as in time from that hero of our schoolboy days. Montaigne's aphorism, that one seldom refers to himself without detriment to the person spoken of, will warn me to guard my utterances in so far as they must be personal.

In the year 1898 it fell to the lot of the speaker to suggest a way in which a certain ample fortune could best be used for the permanent benefit of our people. Many plans were passed in review before a final decision was reached. What was decided upon at last involved substantial gifts in aid of the care of sick children, of the treatment of pulmonary tuberculosis, of missionary efforts, and of various other great charities, but reserved for a single purpose the bulk of what was to be devised. This purpose was to build, equip and maintain in perpetuity an emergency or casualty hospital, which should afford prompt and skilled relief to those injured or taken suddenly ill.

That a need exists for such assistance in all large cities admits of no question. When supplied by the regular service of a general hospital it is apt to be attended by delays and to disarrange the work of the staff. The Relief Station at Haymarket Square, connected with the Boston City Hospital, and the Hudson Street Hospital, which is the Casualty Department of the New York Hospital, are the best institutions of the kind to which I can refer. Each has a staff of its own and the patients admitted are soon transferred to the parent hospital. In Scotland a similar plan is found to be most satisfactory.

In every great modern hospital a department like this must be given a place. On this continent, be it remembered, we have no great modern hospital complete in every detail. Years must elapse before anything approaching the Rudolph Virchow Hospital or two or three others in Europe can become available.

If the dreams of the architects are realized, Blackwell's Island will have one and Cincinnati another, but a million people must make their homes in Toronto before anything so extensive and costly is undertaken here. By that time we shall all be elsewhere. In the meantime Browning's statement holds good:

"The common problem, yours, mine, everyone's,
Is not to fancy what were fair in life,
Provided it could be—but finding first
What may be, then find how to make it fair
Up to our means."

Now an emergency hospital is of necessity altruistic rather than revenue producing. Its per diem and per patient cost must be out of all proportion to what is usual throughout the country. A hospital board with deficits to face can hardly apportion to one department such as this all that is needed to maintain it at its maximum degree of efficiency. On the other hand, the board of a general hospital to which patients can be transferred is the best possible body in which its control can be vested.

My suggestions were accepted by the donors at the time, and subsequently by the General Hospital Trust. This latter body also agreed to place the general direction of the Shields' Emergency Hospital, as it will be called, under the chiefs of the surgical service, and asked me to undertake with the architects the work of building and organizing this special department. It is with real pleasure that I now refer to the way in which Mr. Flavell, Chairman of the Trust Board, the President of the University, the Deans, past and present, of the Medical Department, the Professor of Surgery, the Chiefs of the Surgical Service and the architects have always and in all ways given their assistance in what has so far been accomplished.

The names of the donors were withheld until last year, when litigation regarding the site selected led to their publication. Let me break the seal of my own silence through all these years and say that Agnes and Jane Shields, in loving memory of their brother, John Shields, have made possible this addition to the city's facilities for giving aid to the suffering. Horace

wrote: "I have builded unto myself a monument more enduring than brass." Surely in what they have done for humanity these noble women have builded better than they knew, and their names will be honored by generations yet to come, and by thousands to whom their gift will bring relief in times of sore distress.

Divinum est opus sedare dolorem. These words through all the centuries come down to us from that far isle which held Hippocrates. In spite of the burden of her years, the one who is still with us follows with deepest interest the progress of the building and the plans for its outfitting. As she has discussed these matters with me I have seen the joy of giving in her eyes, and the words of Dr. Holmes have crossed my mind: "If the good Lord will go on making splendid women He must not blame us for thinking too much of His earthly manifestations."

An ambulance service, with swift self-propelled vehicles, such as are needed in a city stretching twelve miles along the lake and running half as many miles back from the water's edge, will form a part of the equipment. It is designed to have house surgeons go out with the ambulances in answering all calls. The cost of the hospital when complete will approximate \$75,000. It will have five operation, dressing or clinic rooms, and 22 beds.

A belief that every physician in Toronto, and in particular every fellow of this Academy, will at times find this new department a god-send has led me to take it up in addressing you to-night. Its work must be upon broad lines, and with due and fair regard for all interests. The interest first of all of the sick or injured person, then of his family physician, then of the one who was called upon to give first aid, then of the students here for instruction—all these and many others must be considered and adjusted in a spirit of fairness. The difficulties will lessen notably if we all remember that in what it is given us to do "One is our Master and all we are brethren."

Within the spirit and letter of the bequest it has seemed to those of us who have the matter under advisement that, outside the regular work of a casualty department, the facilities to be provided may be made useful in a number of ways. Time permits me to refer only to two of these: the teaching of advanced surgical technique in a very personal and practical way and the illustration by stereoscopic and photographic procedures of the surgical work going on.

If asked to name one particular in which the men who are graduated in medicine with us most seriously fall short, I would

answer at once: "In the practical aspects of their surgical training." They spend numberless hours over oil immersion lenses and become facile in their use, their nates are indurated and they run the risk of developing ischial bursitis by sitting out long, didactic courses; they watch operations at long range and through or around assistants, but until they become house surgeons they are not taught the use of their own hands in doing or in assisting to do surgical work. Later they learn these things at the expense of their patients, or they do not learn them, and so muddle along in practice. Regarding scores of candidates whom I have recommended for hospital internships across the line, the common report has been: "Your men are clever and energetic, and well up in theory, but they show little evidence of practical surgical training."

Baden-Powell tells grown-ups as well as boy scouts that one of the worst habits which may be acquired is that of looking on while others do the work. The right way is to learn to do things right by doing them under supervision, and the earlier this is done the better. We do well what we learn early in life to do automatically, and "timely knowledge is no hurt," as the wife of Odysseus told him. It is as easy to learn intestinal anastomosis on material hot from an abattoir as on a portion of human alimentary canal—and it costs less for funerals afterwards. The control of hæmorrhage during operation, and the immobilization of fractures may be taken to illustrate the need of the training of the hand. The followers of Ambrose Pare put back the use of the ligature for almost a century by tying masses from which bleeding came, instead of isolating and exactly ligating the cut vessels. To-day en masse clamping and tying goes on in ways that add new traumatism to tissues already devitalized. Complications naturally and commonly follow. What shall it profit a man to have been taught, in a theoretical way, the last refinement of aseptic surgery while still untrained in the deft and skilful handling of tissues with impaired vitality? One sees too often a wound sponged with the movement used in blacking a boot or a granny knot placed where only a reef should have been tied. Now a reef knot can be tied in at least seven different ways. One single-hand method and one (not Heath's) in which both hands are employed are far and away better than the plans in general use and described in our text-books. Teach these modern methods to a student and he will soon make with unvarying accuracy as many knots in a minute as the Mauretania can make in an hour. We cannot expect him to have "Eyes to find the five which five hun-

dred shall survive" out of all the surgical procedures he may see followed by different operators, but the best of these should be taught him practically. From my own student days I recall an unforgettable sentence in a clinical lecture by Sir James Paget: "When I have seen Sir Wm. Ferguson operate I have not known which to admire most, the perfect skill of hand with which everything was done or the perfect way in which every step of the operation had been thought out and provided for." Work like this is ideal. The other kind is still too common. Dr. Schultz in Manitoba in the early days put up fractures in bark splints padded with moss and secured by buckskin thongs. He acquired merit by doing it in that way and at that time, We all appreciate the value of resourcefulness such as he exhibited, but the foresight which provides at its best whatever may contribute to the recovery of an injured person is more to be commended than any skill in extemporizing makeshifts. My honored teacher, Frank H. Hamilton, warned me not to learn how to put up fractures in outdoor clinics, where the work, at that time, was done in haste, cheaply and roughly. The advice would have less force to-day, but still the need for speed and for economy may militate against the employment of means which the surgeon himself considers to be the most efficient. Having given to the teaching of surgical technique more time and attention probably than any of my colleagues, I feel the more free to point out seeming defects as well as possible means for that correction. Our students and recent graduates go to London or Edinburgh, to New York, Baltimore, Chicago, or Rochester, Minn., to watch operations and to learn the methods by which leading surgeons attain success. Now the percentage of success is as great here as anywhere else, and yet the students do not largely attend operations. They claim that to do so is a waste of time. Given a range of thirty feet and one appendix removal looks like any other one. What wonder then that a series becomes monotonous? The remedy appears to be in making students practically familiar with what is undertaken and giving them a chance to follow the details of operation work. This will hold their attention and they will come to appreciate the ever-changing problems which lie at the point of the scalpel.

I am glad to tell you that, after consultation, those in authority have thought it best to approve of a large clinic room in the Emergency Hospital being set apart for surgical demonstration and fitted up with a lantern and whatever else may be found of advantage. With such facilities it ought to be pos-

sible to prevent any candidate for a degree making, as one did recently, a mistake in the sex of a catheter, not to mention errors of a graver nature. One other line of projected usefulness remains for a moment's consideration. Toronto operators have done and are doing more creditable surgery. Their methods and their results have not been presented to the profession as fully as has been the work done in other cities. One reason for this may be that our surgeons are tongue-tied with modesty. Another, doubtless, is that artists to illustrate the various methods devised or conditions encountered are hard to find and expensive when found. Now by stereoscopic and by color photography it has become possible to portray with great fidelity almost anything that may require illustration. A plant for doing such special work in photography will be available in the new hospital, and whatever assistance can be given in preparing illustrations for papers written by the members of the Academy will be freely at their disposal.

In conclusion, may I ask of the members of our Academy a sympathetic co-operation in making the gift now spoken of a real blessing to the people for whom we care. With your help and with the continued assistance of the gentlemen whom I have mentioned it may be given me to see what will amply repay the study I have given to the problems of emergency surgery for more than a dozen years and in more than a dozen cities. I want to see the new charity started on right lines and doing much good before my time comes to join the group of shades shepherded by Hermes Psychopompus on the banks of Acheron. It may be that all will be forgotten when my camp is pitched in the fields of Asphodel and my canoe glides over the waters of Lethe, but at least I want to take away with me a feeling that I had the confidence of my fellow-workers and that their confidence was not wholly misplaced.

THE FUNCTIONAL ACTIVITY OF THE HEART

BY V. E. HENDERSON, M.A., M.B., .

Associate Professor of Pharmacy and Pharmacology, University of Toronto.

The phraseology used in clinical papers upon the heart is rapidly undergoing such a change that the practising physician who fails to understand the new and special value of the words in vogue will soon be unable to follow the literature. In consequence I have been led to offer this paper in the hope that the graphic presentation of some of the changes in function which may occur in heart muscle, with some comments upon their clinical significance, might be of value. The underlying physiological conception of the heart's activity was due to Gaskell, and was further developed by Engelmann, Cushny, Hering, and other workers. Its clinical significance was first expounded by James Mackenzie and Wenkeback, who have been followed by a host of workers, prominent amongst whom are T. Lewis, Gibson, Hewlett, and Hirschfelder.

According to the prevailing view, the heart muscle has at least five physiological properties of primary significance—irritability, rhythmicity, contractility, conductivity, and tone. My first slide (Fig. 1) shows simply the method with which the subsequent figures were obtained. From this it may be seen that any shortening of the heart muscle will lead to a rise in the writing-point of the lever, and lengthening of the heart muscle will lead to a fall. I have chosen the illustrations from the frog's heart because they are very much simpler technically, and do not require a knowledge of apparatus and method (save what is given in the above figure), and are not so liable to misinterpretation as those obtained from the heart of a mammal, and still less so than those obtained from man.

As tone is perhaps the least generally understood of all the properties, it may be considered first. Tone is best defined as that property of heart muscle in virtue of which it remains in a state of partial contraction. With the tone of skeletal muscle you are of course all very familiar. It depends upon the intactness of the reflex arc, and decreases, of course, whenever this arc is in any way damaged; it falls, of course, in anæsthesia if the motor root is cut, or if the sensory fibres within or without the cord are interfered with. The heart has no motor nerves

and consequently its tone cannot be referred to the intactness of a reflex arc, but is under the control of the central nervous system. Stimulation of the vagus causes fall in tone—of the accelerator, a rise.

Various theories seek to explain this state of partial contraction. Probably the most generally accepted one is that changes in tone are due to equally distributed and equal decreases in length of all muscle cells of the heart (as is stated, for example, by Sherrington (21), or as modified by Bottazzi (1)). Another theory is that not all the cells equally, but only a certain proportion of the cells are at any time contracted (evidence presented by Lingle (15), Foster (5), and Henneberg (9)), and that the increase in tone is brought about by an increase in the number of cells showing such a contraction. It matters little which theory be adopted in so far as our conception of the functional activity of the heart is concerned. These theories roughly imply that, with increase in tone, the musculature of the heart becomes shorter, and, in consequence, thicker. The capacity of the heart's chambers will thus be decreased.

The lowest of the three tracings of Fig. 2, No. 3, shows a fall in tone (increase in diastole, a dilatation of the heart). The other two tracings show much more marked increases in tone. A fall of tone much more marked than that shown in the tracing is not uncommon in a diseased heart. It is not very readily observed in normal individuals, but undoubtedly does occur. Any sudden exertion, such as lifting a heavy weight, greatly increases the blood-pressure, and throws a sudden strain upon the heart, which temporarily dilates (Hirschfelder (10), Roy and Adami (19), O. Franck (6)). This seems to be a passive and not a reflex effect. Such a dilatation in a normal heart is very evanescent (a few seconds or a minute or two), but in a diseased heart return to the *statu quo-ante* is not so rapid. De la Camp (4) examined a large series of normal and diseased individuals. He caused them to perform work to the point of exhaustion (which supervened very early in some cases), and then compared, with the greatest care and precaution, the skiagram of the heart with that obtained before the exercise was begun, and that obtained at various periods subsequently. He showed very definitely that in diseased hearts a dilatation very readily occurred, and was often very slowly recovered from, while he could not detect any change in normal hearts.

An abnormality in this function of the heart occurs, not

uncommonly, in individuals who are apparently well, and much more frequently in patients who are suffering from such diseases as chlorosis and phthisis. At times the abnormality of this function makes itself manifest to the clinician by the presence of a so-called functional murmur. The tone of such a heart is low, the cavity is large, the ring on which the valves are set is larger than normal, the tricuspid and mitral valves which are only just competent under normal conditions are so no longer. Such a heart, examined after death, may show perfectly closing valves, owing to the increase in tone which has taken place post-mortem.

If physicians fully grasped the significance of the variations in tone, much of the obscurity which arises in their minds when they detect a soft, blowing murmur, apparently due to valvular incompetence, would disappear, and their advice to the patient would be more sound. Tone is only one of several important functions of heart muscle. If the other functions are intact the nutrition of the heart is good, and the heart can do its work under trial, it simply means that in one of its five properties there is a peculiarity which by no means condemns the patient to a life of inactivity and constant coddling. As Sir James Mackenzie (16) has so well pointed out, as long as the heart muscle (which has a tremendous reserve, being able to do some fifteen or sixteen times as much work as is ordinarily thrown upon it), shows no signs of suffering from this peculiarity, there is no necessary fear that the patient's life will be cut short.

Tracings Nos. 2 and 3 are due to rapid poisoning with strophanthin and illustrate well a rise of tone produced by this drug or by digitalis. In small therapeutic doses a fall may at first occur. Such an extreme increase as is shown in these tracings is of course not to be desired, but some increase in tone is sought for by every physician when he treats a highly dilated heart with digitalis. I reported a case (8) some two years ago, where a patient who had had a heart lesion for a number of years, again broke his compensation owing to overstrain, and this time even more seriously than previously. When I saw him he had a heart rate of 166, and both right and left hearts were very much dilated. The result of the intravenous administration of strophanthin was a very rapid reduction in heart rate by 100 beats within the first hour, and an improvement in his general circulation; a decrease in cardiac dulness could be detected twelve hours later. Many similar cases are on record, and other observers have had the very great advantage

of being able to definitely prove the decrease in dilatation of the heart by means of the X-ray. May I draw attention to the fact that Hyde (11) has shown that a decrease in dilatation actually improves the flow of blood within the coronary circuit, and though, in my case, the heart probably performed more work per minute than it previously was doing, as it threw out a great deal more blood at each beat, it was, on account of the improvement in its tone, its contractile force, and its nutrition, in a much better condition to do work.

Conductivity is the property possessed by the heart muscle in virtue of which the impulse to contraction which arises in the region of the coronary sinus sweeps from muscle cell to muscle cell, over auricle, bundle of His (bridge between auricles and ventricles) and ventricles. The very great importance of conductivity has only been made manifest by the studies of the last few years. In Fig. III., tracings 1, 3 and 4, are very good illustrations of decrease in conductivity, which makes itself manifest at the auriculo-ventricular bridge. In tracing 1 it may be noted that the up-stroke of the wave consists, firstly, of a small wave due to the auricular contraction, and then to a large wave produced by the ventricle. It will be noticed that the rate decreases, and that this is due to an increase in length of time between each beat; and, finally, it may be noted that an auricular wave occurs, followed by no ventricular contraction until a second auricular beat has taken place. This recurs, and then we have a long series of auricular beats before a ventricular one; then some six normal beats, and again a long period with auricular, but without ventricular contractions. In this case the effect of the drug-stuff (strophanthin) had affected the auriculo-ventricular bridge-fibres to such an extent that only occasionally was the auricular contraction followed by an impulse producing a ventricular wave. Tracings 3 and 4 illustrate the same effect produced by cocaine.

Such a break in conductivity occurs not rarely in diseased hearts, and is one of the symptoms of the Stokes-Adams syndrome. It is one of the important properties of digitalis that it, too, will produce this effect, and if the auricle is beating in an irregular and spasmodic fashion, by decreasing the conductivity, it will set the ventricle free from its unfortunate influences. (Lewis, 13, 14.) It is due to this decrease in conductivity, when digitalis is given in therapeutic doses for a long period of time, that poisoning by it shows the form of the auricle beating more rapidly than the ventricle (heart-block).

The contractility of the heart varies very greatly in accord-

ance with the work that it has to do. It is readily affected by changes in the carbon-dioxide content of the blood-stream (Jerusalem and Starling, 12); by action of drug-stuffs, aconite (Cushny, 3); by digitalis (Gottlieb and Magnus, 7, Wenkebach, 22); by the stimulation of pressor (pain) nerves, (Roy and Adami, 20). It seems to vary for causes which we have not yet explained, at times rhythmically, and to this type of variation Gibson ascribes some cases of rhythmical *pulsus alternans*. Such rhythmical changes in contractility are always a sign of grave cardiac impairment. In Fig. IV., tracings 1 and 2, may be seen good examples of changes in contractility; in No. 1, a decrease due to the application of chloroform; in No. 2, an increase due to caffeine.

Under rhythmicity is probably included more than one real heart property, but the further differentiation of these properties may, for the meantime, be neglected. The rhythm may be regular, but faster or slower than normal; or it may be irregular. Irregularity may be due to a failure in conductivity (heart-block), or to a variation in irritability of auricle or ventricle, or of the sinus region, as was probably the case in Fig. V., tracing 1. Vagus stimulation may slow the heart without causing any other marked changes. This is probably the cause of the slow heart in morphine poisoning. The slowing may be due to a change in the heart muscle itself. This is well illustrated by Fig V., tracings 1 and 2, of which the first is due to chloroform and the second to chloral. Such a toxic slow rhythm, as is shown in Fig. 2, is often overcome by the administration of camphor. The most rapid and most marked changes in rhythm are due, undoubtedly, to the activity of the vagus or accelerator, but very marked changes even in human hearts seem to occur very suddenly for reasons as yet unknown to us, and in which we refer the change to the muscle itself. As our knowledge of cardiac irregularities and abnormal rhythms grows, we are realizing more and more clearly that irregularities are to be lightly considered, especially when they occur in young or in highly-strung individuals whose hearts otherwise are fully capable of doing their daily work. If the cardiac nervous mechanism is labile, sensory stimulations set up even by respiration may cause irregularity (*pulsus paradoxus*), and there seems good reason to believe that psychic processes may produce irregularity, especially when they produce increase in rate. Rhythm, too, is but one of five cardiac properties.

Irritability is that property of heart muscle in virtue of

which it responds to impulses with a change, usually of the nature of a contraction. We can only judge of these variations by the responses which they produce. Several of the most important types of cardiac irregularity are probably due to variations in irritability. Extra-systoles are often due to an increase in the irritability of the atrio-ventricular node (origin of the bridge fibres) (Mackenzie, 17). In other cases they may be due to an increase in ventricular irritability alone. Coupled beats are attributed, also, in some cases to increased irritability (Cowan and Ritchie, 2). The type in which increase in irritability becomes of greatest importance to the physician is, however, in that condition which is now known as auricular fibrillation. It is only seen in hearts which are very badly diseased, usually in hearts whose auricles are very much dilated. In this condition the irritability of many different areas in the auricles is so increased that each area takes on the property of initiating the rhythm. In consequence of this, there impinge upon the bridge of His impulses from several different sources; some of these, finding the conditions for their propagation to the ventricular musculature valuable, pass over and bring about ventricular beats; others, falling in the latent period, have no effect. The result, in consequence, is a tumultuous and absolutely irregular beating of the ventricular musculature. This condition can best be remedied by the administration of digitalis, which decreases the conductivity and leads, in consequence, to the ventricle (whose irritability is also increased by the drug) assuming a rhythm of its own. It is in this type of case that the most astonishing results of digitalis medication are seen. (Lewis, 13, 14.) In many of these cases the auricle fails, at all events for long periods of time, to regain its normal rhythm, and the patient may be compelled to take digitalis in small quantities for prolonged periods of time, and may find that only when digitalis administration is continued is he able to be up and about, and relatively free from symptoms.

In the few simple tracings that I have presented I have attempted to choose only such as would show simply a change in one heart property without the other properties being affected. Very often, of course, not one property alone, but many, are simultaneously altered, either by drug-stuffs or by normal conditions of work and activity. My purpose, however, was to make quite clear that each property may vary independently of the rest, and in consequence is entitled to be considered independently, and hence I have, in as far as possible, chosen such tracings as illustrate this.

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THE USE OF COLD BATHS IN DISEASES OF CHILDREN *

BY JAMES NEWELL, PH.B., M.D., CH.M.

Examiner on Diseases of Children, College of Physicians and Surgeons of Ontario, Watford, Ontario.

I have chosen the subject of cold baths in the treatment of children's diseases. When I received an invitation to read a paper before this Association I cast about, thinking what would suit me as well as those who were to listen to me. I had intended to confine my remarks to the cold bath treatment of convulsions in children, attended by high temperatures, but when I received the printed programme I saw that it stated that I would furnish a paper on the use of cold baths in diseases of children instead of the treatment of convulsions attended by high temperatures. As the subject is comprehensive and the time limited, I shall make a few cursory remarks in general, outlining the salient points in the treatment of a few of children's diseases by the use of cold water. I may say it has for over 30 years been a favorite method of treatment in children's diseases, attended by high temperature and irritability of the nervous system, and that baths in general, cold, tepid and warm, are not more generally used by our profession is a pity. I feel very certain that many of the diseases of children can be just as successfully treated by baths as, and with less subsequent danger than, through the agency of drugs or other potent remedies. When we come across a child lying in convulsions, with a temperature of 104 or 105, rigid, stertorous, and insensible to external impressions, we are very apt to think of inhalations of chloroform, hypodermics of morphia, chloral by the rectum, etc., but in such cases I have seen the happiest results follow the immersion of the child into a bath of 75 or 80 degrees, followed by affusion of cold water over the head, and supplemented by friction of the limbs and body till the rectal temperature dropped to 100. when the child is removed from the bath, and wrapped up with hot-water bags or bottles applied to the extremities, if they should have become blue and cold. In many of the sharp, acute febrile attacks of children, it is often diffi-

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cult or impossible to say positively why there should be such a rapid and high rise of temperature, and frequently attended by nervous twitchings or actual convulsions. Now, it is just in such cases that I have experienced the happiest results from the bath treatment. I am fully aware that, to stay and superintend the bath treatment takes up time, and that it is much easier and less loss of time to deal out a few acetanilid or phenacetine powders, and tell the mother to give one every hour or two till the fever has dropped down or left, but I have always been suspicious of the after-effects of these drugs in the high temperatures of sepsis, inflammations or diseases due to pronounced organic disturbances.

Cold baths or packs are among our most efficient means of reducing temperature.

The coal tar preparations, antipyrin, phenacetine and acetanilid, are all reducers of febrile temperatures, and may sometimes be employed, but their action is apt to be followed by depression of the nervous system and heart, besides which is their injurious action on the blood, of destroying the red cells and converting hæmoglobin into methæmoglobin.

The use, therefore, of baths to bring down dangerous high temperatures in certain diseases of children, complicated by convulsions, has been followed by me for 30 or more years, and with what I think very successful results. The application of cold water lowers temperature without the bad effects of the coal tar preparations, although I must say I occasionally meet with parents who would allow you to fill their children with powerful drugs with impunity, but who are quite often apprehensive as to the baleful or injurious effects which a bath may have on a sick child.

The stimulating action on the skin, the consequent reflex action on the heart and respiratory centre causing an increase in the general blood pressure, as well as a greater depth in the respiration is productive of very beneficial results, by increasing the oxidation process, increasing diuresis and other metabolic changes, such as rise in the number of red cells and an increase in the quantity of hæmoglobin. Time will not permit me to go into the various *modus operandi* of the remedial actions of baths in the treatment of children's diseases, but if I am permitted to draw conclusions from an experience of thirty or more years, they have proved themselves very efficient and safe therapeutic agents in my hands, and I have many times thought that sufficient space is not given to hydrotherapy in our standard works on children's diseases.

Hippocrates has wisely said, in his Aphorisms, "That experience is fallacious, and judgment difficult"; and, as a recent writer in one of our college papers puts it, I shall end by quoting his concluding sentence:

"I am aware, of course, that experience does not carry much weight nowadays, and also that experience is not an infallible teacher. But sometimes it is well for experience and observation to sit in judgment on the actions of the pushing mass of humanity, pushing towards goals of novelty, in order to reduce this spirit to a just degree of conservatism, lest the flights of impulse reach a degree of irrationalism which may react to dim the fair name of science."

Experimental Poliomyelitis

In the *New York Medical Journal* of September 23, is a preliminary report on experimental poliomyelitis by Drs. Neustaedter and Theo. They investigated the contagiousness of this disease, and for their purpose used the sweepings from rooms occupied by infected children. The sweepings were shaken with salt solution, strained through cotton, and then through a Berkfeld filter. The filtrate was used to inoculate monkeys, which, about one week later, exhibited a flaccid paralysis. One of these animals was killed and emulsions made from the cord and used to inject into others, which subsequently developed a paralysis typical of poliomyelitis.

From the result of their experiments so far the authors conclude:

1. Acute poliomyelitis is both infectious and contagious.
2. It is propagated by the dust.
3. The nasopharynx must be the point of entry.

These conclusions make it perfectly evident that most rigid prophylactic measures should be enforced.

F. C. H.

Selected Articles.

THE DIAGNOSIS AND TREATMENT OF SECRETORY DISTURBANCES OF THE STOMACH

BY D. VON TABORA.

Secretory anomalies of the stomach may be classified as irritant and depressive. To the first belong hyperacidity and hypersecretion; to the latter hypochylia and achylia. In hyperacidity the volume of the gastric contents after a test breakfast is not increased, and may be less than usual. If placed in a conical glass, the solids which settle form half or more of the total. The difference between the amount of free HCl and the total acidity is usually at least 15 or 20; for instance, if the free HCl is 50 degrees the total acidity will be 65 or 70. In hypersecretion the volume of the gastric contents is abnormally large, and on sedimentation is found to be chiefly liquid. The difference between free HCl and total acidity is slight, and usually not more than 5. Thus the gastric contents are composed chiefly of pure gastric juice, compared with which the amount of fixed acid is almost negligible. Hypersecretion may be acute and intermittent or chronic; purely alimentary, and occur only on the stimulus of the ingesta, or continuous (Reichmann's disease). In the last form, after the stomach has been washed completely free of food, more or less gastric juice is always found. In both the alimentary and the continuous forms, the percentage of free HCl is usually raised. Except in cases complicated by disturbances of motility, the small amount of solid particles in the material obtained by syphonage, and the slight amount contributed to the total acidity by the combined acid are invariable. Transition forms between hyperacidity and hypersecretion are common. Thus, the sediment may be normal in quantity, and the difference between free and combined acid may be slight. In such a case there is probably a combination of hypersecretion with hypermotility. Or in spite of an absolute increase of the fluid constituents, the solids may be increased, and form 50 or more per cent. after sedimentation. The percentages of free and combined acid may both be high and the difference between the two considerable. Evidently in such a

case there is a combination of hypersecretion with motor deficiency, which may depend on organic pyloric stenosis.

A diagnosis of secretory gastric anomalies is possible only by syphonage. The symptoms are often misleading. Thus "heart-burn" is often complained of in achylia. When a diagnosis of an irritant secretory disturbance has been made, the cause must then be determined. Is it due to functional or organic causes? In connection with the latter variety, the importance of discovering latent or occult gastric hæmorrhage by examination of the fæces, as evidence of ulceration, must be remembered. The presence of increased gastric peristalsis and gastrectasis and of sarcinæ and yeast cells in the gastric contents points to organic pyloric stenosis. The occurrence of large quantities of mucus, especially in the fasting stomach, suggests inflammatory conditions of the mucosa, though its absence does not negative the presence of gastritis.

Supposing the diagnosis of irritant hyperacidity is made, the treatment should be directed against the excess of acid. But this alone is insufficient. The factor of the sensibility of the gastric mucosa to excess of HCl is of great importance. If the gastric contents of a number of apparently perfectly healthy persons, who have never had gastric troubles, are syphoned off in a not inconsiderable proportion hyperacidity will be found. In other cases dyspepsia occurs, not as the result of dietetic errors, but after mental excitement, worry, or over-exertion. It might be supposed that during such attacks of nervous dyspepsia, hyperacidity would be found, but not in the free intervals. As a fact, more often than not the composition of the gastric contents does not vary, and the gastric troubles are due to increased sensibility of the mucosa; in other words, to diminished tolerance towards acid. If 100 c.c. of a solution of HCl of a strength equal to that of normal gastric juice are ingested during fasting, some individuals will at once complain of hyperacidity: in others, no effects are felt. The varying conditions of tolerance are often seen during treatment, and though the composition of the gastric contents remains unchanged, all the subjective sensations of hyperacidity may disappear.

Variations of tolerance and the disappearance of symptoms, though common, with persisting hyperacidity, are most exceptional in the anomaly described as hypersecretion. In this there is almost always a definite parallelism between the degree of gastric discomfort and the composition of the gastric contents.

In the treatment of irritant secretory disturbances, the excess of acid may be neutralized by alkalies, or its production in-

hibited by atropine. Atropine, eumydrin, euphthalmin, and to a less extent belladonna, in a large percentage of cases promptly reduce the secretion of the gastric juice. The best results are obtained by hypodermic injection of atropine, which should be employed in all severe cases, after failure of the usual methods. The dose is $\frac{1}{2}$ to 1 mgm. (approximately 1-120 to 1-64 gr.), and the maximum daily dose 2 to 3 mgm. (1-32 to 1-20 gr. approximately). Such effects as paresis of accommodation, dryness of the throat, and, rarely, vertigo, are no contra-indications to a continuance of the course. Intolerance of atropine is occasionally found. To test its suitability in any case inject first $\frac{1}{2}$ mgm. before a test breakfast, and on the following morning 1 mgm. If there is a distinct reduction of the secretion of gastric juice the course should be persisted in. The sole contra-indications are diseases of the heart and vessels, and unusual susceptibility to the action of the drug. A fortnight's course frequently suffices, but in an unusually severe case of hypersecretion, in which an operation had been advised by several authorities, the writer injected 89 mgm. within a month. The man was then cured, and a year later remained in excellent health. Belladonna gives good results, and may be given by the mouth with alkalies, or as suppositories containing 0.03 gm. (about $\frac{1}{2}$ gr.) of the extract. Of these, 3 or 4 may be used daily over several weeks.

Alkalies may be given after food to neutralize the excess of acid. But though the discomfort may be removed by this method it has no curative effect. The right method is to prescribe alkalies for hyperacidity half an hour before food. In the fasting stomach they inhibit gastric secretion partly by a direct action on the gastric mucosa, and partly by a reflex action at the moment they enter the intestine. This occurs rapidly in the fasting stomach. A useful powder is magnesia usta 20, sodium citrate 10, and sodium or magnesium sulphate 5 parts, to which may be added a small amount of fol. or extract belladonnæ. Of this as much as will lie on the point of a knife should be taken half an hour before each meal. Bicarbonate of sodium is apt to irritate the stomach by the production of free CO_2 , and to cause unpleasant or painful distension and eructation. Sodium and magnesium sulphate have a peculiarly strong inhibitory action on gastric secretion, and at the same time relieve the constipation which is usually present. The alkaline powder should be continued uninterruptedly during 4 to 6 weeks. If it fails, an atropine course is usually indicated.

Fats like alkalies, have been shown experimentally to inhibit

gastric secretion reflexly from the intestine. The writer has used them extensively, but with poor results as regards hypersecretion. Nevertheless, they have a soothing effect on the gastric mucosa and relieve pain by forming a protecting layer over it. By syphonage it may be proved that this layer of oil remains for some time. Apart from diet, fat is best given in the form of oil—sesame, olive, or almond, according to taste. Three tablespoonfuls should be taken daily between meals.

The diet in hypersecretion is not easy to regulate. It should be as unirritating as possible and pass into the intestine rapidly. It is still disputed whether it should consist chiefly of carbohydrates and fat or albumin and fat. In the writer's experience most patients do best on a mixed diet, containing a preponderance of albumin and fat. Though carbohydrates are more digestible than albumin, they have not the capacity of fixing acid. Hence if albumin is taken the time of appearance of free HCl in the stomach is postponed. And this is most important. For at the moment free HCl is present discomfort begins. As the first portion passes into the intestine the pylorus closes reflexly, and does not open again until the acid has been neutralized by the intestinal juices. Hence the earlier free HCl appears the longer is the time required for the stomach to empty itself, and the greater the total amount of gastric juice secreted. Further, ptyalin digestion, so important with carbohydrates, is inhibited by the presence of free HCl. That food rich in albumins is digested and leaves the stomach more quickly than carbohydrates is easily demonstrated by syphonage. Food should be minced and given in the form of purée. This facilitates rapid evacuation of the stomach, and is preferable to too prolonged mastication, which itself excites gastric secretion. As to special articles of diet, meat is the less irritating the more it is boiled, without lowering its property of fixing HCl. Boiled fish is also suitable. Roast meat is more stimulating to gastric secretion. The white of egg is less stimulating than the yolk, but eggs as a whole are allowable. Milk is usually well borne, especially if unskimmed. Cream and mild cream-cheese may be taken in small quantities. Butter, especially "fresh" butter, is excellent. Of vegetables, potatoes should be avoided, but all others, especially as purées, are allowable. Bread is strongly stimulating to gastric secretion, and is usually badly borne. It should be allowed only as toasted white bread. Sweets should be excluded, as also should spices, large quantities of salt, meat extracts, and soups. Alcohol should be forbidden, and replaced by water or an alkaline table water. The number of meals

depends on the patient's custom, which may usually be followed. A generous diet is essential, and if there is fear of taking food this must be combated.

The above rules apply to irritant anomalies of secretion in general. The following is the summarized treatment for special varieties:

Hyperacidity: Mixed diet with preponderance of albumin and fat. Alkalies regularly before meals, and at other times if pain occurs. If painful sensations are frequent, a course of oil. If this fails, belladonna.

Chronic Hypersecretion (both alimentary and continuous): In slight cases a pure albumin and fat diet. Alkalies, fat, and oil as for hyperacidity. In severe cases, a course of atropine, which is almost always indicated in the continuous form. In addition, with excessive secretion, the symptoms are alleviated most rapidly by evacuating the stomach contents by the stomach tube. This applies especially to cases of Reichmann's disease, in which the patients should be instructed to use the tube themselves. The nocturnal pains of this disease are prevented with certainty by the late use of the tube.

Acute Intermittent Hypersecretion is rare and usually due to psychical causes or gross errors of diet. Prophylaxis is usually effectual. During an attack the stomach should be at once emptied with the tube, and an injection of atropine given. The psychical influence of the practitioner in all cases of hypersecretion is of the first importance, and patients should be assured that their condition is curable.

The second chief group of secretory disturbances is the depressive. The condition is diagnosed entirely by the stomach tube and analysis of the gastric contents. Strictly hypochylia indicates that the secretion, both of acid and ferment, is diminished, and achylia that both are absent. In practice the former indicates a deficiency of HCl after a test meal, and the latter its absence.

In hypochylia and achylia after a test breakfast, the quantity syphoned off is—unless the case is complicated by motor disturbances—usually small, partly because there is no, or but little, gastric juice, and partly because in the absence of reflex stimulation of the pylorus by the acid, the intermittent closing of the pylorus does not occur, and the stomach is rapidly emptied. The more complete the achylia is, the less as a rule remains in the stomach, and the more the contents are composed of solid undigested particles. The Congo paper reaction is negative or faint, and the total acidity is small. The total

acidity is not due to combined HCl, but to the acid phosphates introduced in the food. Lactic acid is absent in achylia, unless the case is complicated by disturbances of motility, when it may be found in traces. Occasionally, the sediment of the gastric contents contains traces of recent hæmorrhage. Large quantities of mucus are seldom present. The appearance of the gastric contents in achylia is so characteristic that with some practice the condition may be diagnosed without further investigation. The subjective sensations are not characteristic.

The depressive forms of gastric secretory anomalies, like the irritant, may be functional or the result of organic changes. Many cases of achylia are due to gastritis, though the connection is often difficult to establish as, on syphonage, mucus—the only certain sign of gastritis—is often absent. Of great importance is the frequent occurrence of hypochylia and achylia in gastric carcinoma. Evidences of carcinoma are a well-marked lactic acid reaction, long bacilli, and admixture of old blood (clots). It is important to know that achylia is common at advanced ages, apart from carcinoma.

In a large number of cases of achylia and hypochylia no abnormal symptoms are present and no disturbance of health or nutrition results, the lack of gastric digestion being fully compensated by intestinal. Obviously no treatment is then required, and if the condition is accidentally discovered it should not be disclosed to the patient, as the knowledge that no gastric juice is present frequently leads to hypochondriasis. Treatment is required if anorexia, gastric oppression, and nausea result, and especially if the intestinal digestion fails to compensate for the absence of gastric. In these cases there is a tendency to diarrhœa, and nutrition suffers. To stimulate the formation of HCl the fasting stomach should be irrigated every morning with a dilute solution of NaCl. HCl is the one useful drug. Though it does not directly stimulate the secretion of HCl in the fasting stomach, it may stimulate the secretion of pepsin, and probably enables the gastric mucosa to react to the stimulation of food by the production of more acid. Further—and this is a most important property in complete achylia—HCl is a powerful stimulant to pancreatic secretion, and thus effects more complete absorption of albumins. It also dissolves connective tissue, which resists the action of pancreatic juice, and inhibits intestinal putrefaction. Finally, by producing reflex intermittent closure of the pylorus it regulates the passage of food into the intestine, and prevents sudden overloading. To obtain good results it must be given in full doses. The writer

seldom prescribes less than 100 drops of the acid hydrochlor. dil. of the German pharmacopœia as a daily dose. This is divided into 5 doses of 20 drops, half of which are taken before and the remainder during and after food. Each dose should be diluted with at least 300 c.c. (about 10 oz.) of water and taken through a glass tube. "Acidol" (hydrochloride of betain) has recently been recommended as a substitute for HCl. It gives off free HCl when diluted with water, but it is doubtful whether it is more effectual than the official acid, and its cost is much greater. It is, however, pleasanter to take. Two tablets containing 0.7 gm. correspond to a dose of 20 minims of the dilute acid. Exceptionally better results are obtained by combining the acid with an active preparation of pepsin. The treatment must be continued for weeks or months after all symptoms have disappeared to obtain a permanent result.

A mixed diet is indicated in the depressive anomalies as in the irritant, with the difference in the former that carbohydrates should preponderate. The conditions are especially favorable to amyolysis, and carbohydrates effectually neutralize the tendency to intestinal putrefaction. Of great importance in achylia is that food should be finely divided—meat minced and vegetables mashed. Especial care should be taken to remove all connective tissue from meat. With these exceptions no special diet is required unless the case is complicated by gastritis. Alcohol, especially in the form of acid wines, such as Moselle and cider, is allowable. Meals should not be too copious. It is better to have 5 or 6 smaller meals daily.

A tendency to diarrhœa is present in about a quarter of all cases of achylia and less often in hypochylia. This occurs especially after albuminous food. The feces are most offensive, and have an alkaline reaction. Probably the cause is the increased intestinal putrefaction. In such case albumins should be completely withdrawn, and a diet consisting exclusively of carbohydrates should be temporarily substituted. A milk diet also often gives excellent results. If the diarrhœa is kept up by intestinal catarrh, a mixture of bolus alba (kaolin), 100 parts, and water, 200 parts, gives the best results. Three to five tablespoonfuls should be taken daily.—*Deutsche Med. Woch.*

THE SIMULTANEOUS TREATMENT OF TWENTY-SEVEN CASES OF BURNS

BY J. F. ALEXANDER, M.D., WEST BLOCKTON, ALA.

Burns are among the commonest of lesions with which the physician in general practice is confronted, yet there is much variance of opinion and diversity of method regarding their treatment. Text-books afford scant assistance. Works on surgery give little attention to the subject, beyond careful explanations regarding the classification of burns, brief mention of a few drugs, general suggestions as to combating shock and supportive measures, and reference to works on general medicine. The latter quite generally omit any mention of burns, or simply refer to some work on surgery. This lack of authoritative information is the more astounding when one recalls the host of drugs which have been suggested for the treatment, and when one reflects that those which have found any general acceptance at the hands of the mass of practitioners may be "counted on one's fingers."

When recently, the somewhat uncommon experience was afforded me of being called to treat simultaneously twenty-seven cases of burns of the first, second and third degrees, sustained at the same time and in the same manner, I determined to make a comparative test of the five methods hereafter detailed. I did this because all are in common use; all appealed to me as being well advised and rational; and because I wanted to know the effects and results as well as the advantages and disadvantages of each of them.

The group of cases as a whole presented three rather remarkable features: First, the extensive areas of skin involved; second, the fact that four in the twenty-seven developed duodenal ulcers; and, third, that all recovered.

Physiologists estimate the total area of skin surface at "from 16 to 20 feet in man and from 12 to 16 feet in women" (Brubaker, *Text-Book of Physiology*, third edition, page 486). The smallest area of skin involved in any of these cases was five feet, and the largest fifteen feet, as closely as I could estimate it. Authorities are united in declaring that, "as a rule, it may be said that if one-half of the cutaneous surface be affected, no matter how slightly, the case will probably terminate fatally. Even if one-third, or one-fourth, of the surface be burnt, the

prognosis should be very guarded" (Ashhurst's Principles and Practice of Surgery, sixth edition, page 331).

All of these patients were injured while trying to escape from the second floor of a burning building, and nearly every one of them presented burns of the face, arms and breast. There were no cases of asphyxia nor of edema of the glottis. The popular idea of speedy dissolution on account of "swallowing the flame" is, of course, a physical impossibility; yet it is remarkable, with the great number of cases presenting lesions about the face and breast, that there were no burns of the throat with consequent disastrous results.

Four of the cases developed ulceration of the duodenum. This is called "a peculiar and very grave, though fortunately rare, complication." "The duodenal ulcer usually proves fatal, either from hæmorrhage or by perforation of the abdominal cavity, thus giving rise to peritonitis" (ibid., p. 330). The hæmorrhage in all of the four cases was severe. While all received the usual treatment, I attribute the recovery of every one of the cases complicated by duodenal ulcers to the continual and rigid supervision of the diet, all being strictly limited to liquids.

Seven cases of burns of the first, second and third degree were treated by the boric acid solution bath.

Pieric acid solution was employed in five cases, including burns of the first, second and third degree.

Carron oil was used in five cases presenting the second and third degree lesions.

Unguentine was applied in five cases of the second and third degree.

Ichthyol ointment with a lanolin base was resorted to in five cases of the third degree. Forty-eight grains of ichthyol were added to two drams of olive oil, and incorporated with enough lanolin to make three ounces.

The boric acid solution baths were given for two to six hours, and repeated at two to six hours intervals. A little experimentation convinced me that the parts should remain three hours in the bath. I am aware that continuous baths have been advised, but this plan was not followed in many of my cases. Early in the treatment, I ordered the bath to last for three hours, with a six hours' intermission, but observation convinced me that this routine should be modified to suit individual cases.

The cases in which pieric acid solution was used were dressed with loose gauze from the ordinary roll, this being saturated with the pieric acid solution and then covered with oiled paper. The gauze was kept continually moist, and the dressing was renewed every second or third day.

The ichthylol ointment was applied to the lesions, covered with gauze, and then with oiled paper.

In every case all lesions were thoroughly cleansed with water and soap before any dressing was applied. While the fire unquestionably destroys all bacteria on or in the skin at the time the burn is sustained, contamination is practically certain to occur afterwards in all instances. It is not possible, of course, to secure complete antisepsis, but danger of infection from germs of known virulence should be minimized so far as possible. After I had washed with soap and water, in cases where there was considerable destruction of skin, peroxide of hydrogen was applied and proved satisfactory. It is worth while to examine the various brands of peroxide and to select that one showing the least acidity. Much of that on the market has had acetanilid added to it, but this is in no way objectionable. Quite a saving is experienced by buying the peroxide by the gallon, where any considerable amount of it is used. Where the dressing has dried out, or where from any cause it adheres to the denuded surface, a few drops allowed to fall on the gauze will quickly dissolve inspissated material, and permit of easy and painless removal of the dressing. It is essential to rapid healing that the washing previous to dressing be thorough, yet gentle. All exfoliated epithelium should be removed even from areas not strictly within the circumference of the burn.

There is a tendency to use the term "severity," as applied to a burn, with reference to the depth of destruction of tissue. This is an error. A very slight burn, covering a considerable area of skin, is more *severe* than one of a great depth which is limited to a comparatively small area. Extensive burns are always severe, even though the depth of the lesion be slight. Every case of burn presents, in greater or less degree, three well marked stages, and the wise practitioner will watch carefully for each and treat it according to the indications. The first stage is the stage of depression, marked by pain and loss of bodily heat from destruction of the skin or from suppression of its physiological activities. The second stage presents inflammatory fever, with delirium in some cases, and, if the lesions be located upon the head, breast, or abdomen, there is possibility of the development of cerebral inflammation, bronchitis or pneumonia, peritonitis or duodenal ulcer. The third stage, of course, has to deal with the effects of a greater or less degree of septic absorption, damage to the red blood corpuscles, and perhaps secondary parenchymatous inflammation of the kidneys or true uremic poisoning.

The local symptoms are important, also, but have less prognostic significance. The feeling of intense cold soon after the burn, the insatiable thirst and vomiting, the restlessness presented as the second stage develops, and the prostration and debility of the third stage are familiar to all who have treated these lesions. It is not necessary to go into any details of their management, as each case must be managed according to the general indications.

I wish, merely, to present my conclusions as to the advantages of each of the dressings I employed in treating these twenty-seven cases, in the hope that my results may be of benefit to others who do not have any distinct idea as to the best dressing in various forms of burns.

In burns of the first degree, the picric acid solution gave results far superior to those of any other dressings, and in cases of the second degree the effect was perfectly satisfactory. I regard the "bug-a-boo" of toxicity from this agent with little concern, the areas upon which it was applied being so extensive that there was ample opportunity for absorption. It is true that some of my patients voided darkened urine, but I was always able to clear this up promptly, and to insure speedy elimination by the administration of daily doses of Epsom salts.

The boric acid solution baths gave the best results in burns of the second degree, and the ichthyol formula in burns of the third degree.—*The International Journal of Surgery.*

SUGGESTIONS FOR THE TREATMENT OF INSOMNIA

BY C. WILLETT CUNNINGTON, M.B., B.C. CANTAB.

Insomnia is a condition which is met with in varying degrees almost daily in general practice, yet it is one which is treated only too frequently in some routine fashion, and often enough baffles treatment altogether.

VARIETIES OF INSOMNIA.

The problem of "getting a patient to sleep" is sometimes obstinately difficult, sometimes dangerously easy, and this is apt to be the case when the only weapon employed is some sort of hypnotic. The purpose of this paper is to suggest the methods of approaching and dealing with this problem. There is no routine solution, because each case needs careful investigation as to the cause of the condition before the appropriate treatment can be arrived at. For this purpose it is useful to make a rough division of cases into two main groups: (1) Those in which the insomnia is a condition dependent on some definite disorder, whether of an organic or of a functional nature; (2) those in which there appears to be no such primary disorder. We may refer to the one group as secondary and to the other as primary insomnia. There are many diseases of which sleeplessness is a marked feature, but for the purpose of this paper we may set aside such cases, seeing that the symptom in question forms only a small part in the problem of treatment. We may, then, disregard the insomnia occurring in acute fevers or produced by severe physical pain, and consider in this category only those patients whose most prominent symptom is sleeplessness. It is necessary, first of all, to decide whether a given case belongs to the primary or secondary group. This entails an investigation, especially of the nervous, vascular, and urinary systems, putting them in their order of importance.

NERVOUS CAUSES.

Of the nervous system diseases, such as commencing general paralysis, chorea, cerebral tumor, and mental diseases, may be mentioned as typical examples. In some of these and similar

nervous diseases the insomnia is due to pain; in others to excessive nerve irritability. Reference must be made to that functional nervous disease or symptom-complex described as neurasthenia. Here inability to sleep may be the chief complaint of the patient, the other symptoms being elucidated only by questions. It is a very familiar condition, and only needs mention, because in some patients the insomnia is so marked that it demands primary attention. These need absolute confinement to bed, forced feeding, and, for a time at least, a sleeping draught at night. Paraldehyde in drachm doses is particularly serviceable.

CIRCULATORY CAUSES.

Diseases of the vascular system as causes of insomnia are more important because more often overlooked. As soon as cardiac compensation begins to fail, sleeplessness becomes noticeable; but it may be present even when compensation appears good. This is particularly the case in aortic regurgitation. Such a patient will describe his sleep as a matter of "fits and starts," and his short snatches of slumber are liable to be troubled with harassing dreams.

A more common vascular cause of insomnia is arteriosclerosis, and this is often overlooked. A typical example would be the over-nourished, strenuous man of business who finds, when he has reached the "critical period" of the fifties, that "his nights are not as good as they used to be." He ascribes those hours of wakefulness, occurring from 2 a.m. onwards, to business worries, pressure of work, and the like, and the suggestion put forward by him is often too readily accepted by his medical attendant, who is led to recommend a bracing holiday as a cure. The patient, snatching a fortnight from the office, hastens to Swiss mountains to be "braced up," and adds further strain to his brittle arteries.

Similarly the patient with chronic albuminuria may come complaining only of sleeplessness. The danger of treating these vascular and renal cases in a routine fashion by soporifics is obvious enough. They are suffering probably from defective cerebral circulation or defective excretion of nitrogenous metabolised products, and need treatment on those lines.

Often enough the man with thickened vessels complains that of an evening after dinner he will doze in his chair, only to find himself unable to sleep later on when he retires to bed. The warmth of the fireside relaxed his peripheral arterioles, which contracted again in the cold of the bedroom.

PRIMARY INSOMNIA.

Suppose a patient presents no evidence of disease of the systems mentioned, and we are compelled, a little reluctantly, to classify him as a case of primary insomnia. In reality this signifies that the exciting cause is of a psychological nature; there are many such, some obvious, some less so.

Expressed aphoristically, in business men troubles of work, in married women troubles of the home, and in young people troubles of the heart, these rob the sufferers of sleep. People will tell their doctor of the existence of business worries, but on more intimate matters they are reticent, and questions have to be put. One finds that all these private troubles are of two types: anxiety as to the future or unhappiness as to the past. It is the duty of a doctor to question, without prying, for he may be able to give advice in the former and comfort in the latter. To these patients words of wisdom will be more valuable than even the most ingenious prescription. A broken heart, for instance, is not to be cured by coal-tar compounds. There remain, however, a number of patients who have nothing on their minds and yet cannot sleep. In some there is a family tendency, in others a habit has grown, perhaps, from small beginnings. These are exceedingly difficult to manage successfully. Before resorting to drugs there are a number of small points worth attention. The doctor must be satisfied that every material factor is favorable for obtaining sleep. It is odd that people will neglect to see that their bedrooms are absolutely dark and quiet at night. Cold feet will keep people awake, and they have often learnt the value of hot-water bottles.

In habit cases it may help to advise a change of bedroom or even of house for a time. The evening meal is an important matter, but no general rule can be laid down, as one person will be awake because his stomach is empty and another because it is otherwise. The late dinner of the full-blooded, over-nourished man needs curtailing, while the thin, dyspeptic, nervous woman requires more nourishment. For them some easily digested milk food the last thing at night is useful. Tea and coffee are best avoided, especially in the latter part of the day. On theoretical grounds alcohol is best abstained from, but in people over fifty it is seldom wise to change a habit which may have become second nature. The popular fancy for a "night-cap" has its obvious objections.

Attention must be paid to the proper ventilation of the patient's bedroom, and he should be urged to spend as many

hours as possible out of doors each day. Extra pillows will help the heart cases, and this device may be of service to some others as well.

A few words may be added about those unfortunates who perhaps themselves recognize that their insomnia is due to "the slings and arrows of outrageous Fortune." They are too often familiar with the cheerless comment that "the case is not a medical one." On the contrary, it is to such people especially that useful advice and help can be given, and it is important that they should be convinced that help can be given by their doctor. Generally they will describe their nights as "fairly good until 2 a.m." After that hour they lie awake and brood over their troubles. Most of us have had personal experience of that worst of all nightmares "the 2 a.m. worry." They should be urged not to lie thinking, but to read on waking. Let them have books at their bedside to which they can turn. Even the selection of the volumes is not outside the province of a wise medical attendant. To replace the sleep missed at night these patients should lie down for an hour or so after lunch. The afternoon nap is a habit to be encouraged. Sometimes the régime of the day needs entire change; one has to remember that sorrow is softened by distractions, and here a change of scene is helpful, while anxiety is not so readily relieved by such methods.

Lastly, and it should always come lastly to the doctor's mind, is the matter of drugs. A soporific may be regarded as an evil, yet in some cases as a necessary one. There is nothing safer, especially in primary insomnia, than a dose of bromide at bedtime, reinforced, if necessary, by the addition of chloral. The doctor should aim at reducing the dose insensibly as sleep is regained. Veronal is at present very fashionable, much too fashionable. Seldom is it necessary to give a larger dose than seven grains. It acts quickly and leaves no ill after-effects, except the temptation to make of it a "friend on the dressing table." Sulphonal, which acts more slowly, should be given in the afternoon. Most hypnotics tend to constipate, and therefore a saline aperient in the morning is desirable.

The patient with high blood-pressure will find drugs to relax the arterioles helpful. These are the people, if any, who benefit from alcohol at bedtime. Whatever drug is used its name and amount should, if possible, be concealed from the patient's knowledge, and the dose steadily diminished as soon as possible.—*The Hospital*.

Progress of Medical Science.

MEDICINE.

IN CHARGE OF W. H. B. AIKINS, F. A. CLARKSON, BREFNEY
O'REILLY AND F. C. HARRISON.

Demonstration of Hydrochloric Acid in the Stomach Without Passage of Stomach Tube

Fuld recently claimed that the presence of HCl in the stomach could be demonstrated by the administration of a solution of soda an hour after a test breakfast and auscultation over the gastric region. If HCl is present, a fizzing is heard owing to the generation of CO_2 . E. Schütz (*Zentralbl. f. inn. Med.*, May 27th, 1911) has tested the method in about 100 cases. An hour after a test breakfast he gives 2 grams (about 5ss) of bicarbonate of sodium dissolved in 50 c.cm. ($1\frac{3}{4}$ oz.) of water. Previously a small portion of the gastric contents was extracted with the stomach tube and its acidity determined, to enable a comparison to be made between the degree of acidity present and the results of auscultation. Examination in the erect position gave more reliable results than in the supine. In the latter the results of analysis of the gastric contents and of auscultation frequently disagreed. But in the former, fizzing due to the evolution of CO_2 is usually plainly heard. This probably depends on the fact that the sounds are loudest when the fluid is in the immediate neighborhood of the abdominal wall and faintest when a layer of gas is interposed between the fluid and the abdominal wall. The ear should be placed directly on the skin and the position of greatest intensity of the sounds determined by rapidly examining the whole of the upper part of the abdomen. If the acidity falls below 15, no fizzing occurs, or it is indistinct. With high degrees of acidity it is often extremely loud and persists for some minutes. Extreme obesity or rigidity of the abdominal walls may obscure the results, even with marked hyperacidity. The sounds which arise in fermentative processes within the stomach are easily distinguished from the fizzing sounds accompanying the evolution of CO_2 . Even the presence of lactic acid appears to give no positive result. Fuld's

test is thus in no way so reliable as direct chemical examination of the gastric contents, as a negative result does not exclude the presence of free HCl with certainty. A positive result, however, appears to be conclusive of its presence. The method may also be used to determine the lower limit of the stomach, as the fizzing with the patient in the erect position ceases suddenly at the lower margin of the stomach.—B. M. J.

The Sensibility of the Alimentary Canal

For the Goulstonian lectures for 1911, delivered by Arthur F. Hertz at the Royal College of Physicians, the subject was "The Sensibility of the Alimentary Canal." The lectures appeared in full in *The Lancet*. The subject is dealt with in a most scientific and interesting manner. The writer concludes as follows:

1. The mucous membrane of the alimentary canal from the upper end of the œsophagus to the junction of the rectum with the anal canal is insensitive to tactile stimulation.

2. The mucous membrane of the œsophagus and the anal canal is sensitive to thermal stimulation, but that of the stomach and intestines is insensitive.

3. The mucous membrane of the œsophagus and stomach is insensitive to stimulation by dilute HCl and dilute organic acids, and the rectum, but not the anal canal, is insensitive to stimulation by glycerine. Contact of alcohol with the mucous membrane of all parts of the alimentary canal gives rise to a sensation of heat.

4. The surface of gastric and intestinal ulcers is no more sensitive to tactile, thermal, and chemical stimulation than the intact mucous membrane.

5. The sensation of fulness in the alimentary canal is due to a slow increase in the tension exerted on the fibres of its muscular coat; the adequate tension is constant for each segment, but the volume of contents necessary to produce this tension varies with the tone of the muscle-fibres.

6. The sense of fulness in the rectum has a special character, by virtue of which it produces the call to defæcation.

7. Hunger consists in a general sensation of malaise and weakness in the body as a whole and a local sensation of emptiness in the abdomen. The latter is due to the periodical motor activity of the stomach and intestines during fasting, when the sensory nerves are in a condition of hyper-excitability.

8. The only immediate cause of true visceral pain is tension; this is exerted on the muscular coat of hollow organs and on the fibrous capsule of solid organs. The sensation of pain in the alimentary canal is due to a more rapid or greater increase in tension on the fibres of its muscular coat than that which constitutes the adequate stimulus for the sensation of fulness.

9. Pain in diseases of the alimentary canal is most frequently true visceral pain; it is sometimes due to spread of the disease to surrounding sensitive structures or to tension exerted on the peritoneal connections; and, lastly, it may be situated in the skin, muscles, and connective tissues, to which it is referred from the segment of the central nervous system, which receives the afferent nerves from the affected organ.

10. Tenderness in disease of the alimentary canal is most frequently due to hyperalgesia of the skin, voluntary muscles, and connective tissues supplied by the segment of the central nervous system, which receives the afferent nerves from the affected organ. It may also be due to increase in tension within the organ produced by the external pressure giving rise to the adequate stimulus of visceral pain; this is rare in the stomach, but comparatively common in spasmodic conditions of the colon and in appendicitis. Lastly, it may be due to the spread of the disease to the parietal peritoneum.

11. Visceral sensibility is exaggerated by training in hypochondriasis, and visceral and referred sensations are exaggerated by the irritable condition of the central nervous system in neurasthenia and anæmia.—*The Medical Review*.

Cases of Gastropotosis

Dr. T. R. Brown, of Baltimore (*N. Y. Med. Journal*) concludes from a series of cases of gastropotosis:

1. While in individual cases of gastropotosis we may meet with varying amounts of free hydrochloric acid, ranging from a condition of achlorhydria to one of hyperchlorhydria, nevertheless the tendency in the majority of these cases is towards a distinct diminution of the free acid.

2. The extent of this diminution is dependent upon the amount of downward displacement of the stomach, the diminution being slight in the cases of slight descensus, very marked, with a tendency to complete disappearance, in cases where the ptosis is very great.

3. The fact that so many of the patients with marked ptosis

show a complete absence of free hydrochloric acid suggests that gastropsis may be one, if not the most important causative factor of achylia gastrica (so called). That this achlorhydria is functional in a large proportion of these cases is shown by the fact that under the appropriate treatment, overfeeding, a proper dietary, rest at appropriate times, the wearing of a suitable support, and postural treatment in conjunction with the administration of hydrochloric acid by mouth, there is usually a return of the free hydrochloric acid after the test meal, although it may require persistence along this line of treatment for many months before this occurs.

The Aetiology of Auricular Fibrillation

Lea (C. E.) (*Quarterly Journal of Medicine*): Auricular fibrillation may be recognized as a definite clinical entity. It is characterized by a suspension of the normal auricular contraction; its musculature is in a state of fibrillation, and the effect of this upon the ventricle, and consequently the pulse, is to cause irregular systoles, irregular both in force and rhythm. The pulse presents the familiar character long known as the "irregular pulse of the second stage of mitral stenosis." The type of pulse is in most cases readily recognized, even in the absence of graphic records. Such irregularity may persist for long periods of time; it is abrupt in onset, and it is usually associated with an increase in the severity of the subjective signs.

The writer has analyzed 69 cases of auricular fibrillation. In all but 6, graphic records were obtained: in 13, electrocardiographic tracings were gained by Dr. Lewis. Special attention was directed to the possible etiological factors concerned in its production or in the pathological changes in association with which fibrillation was observed to occur.

The chief conclusions were that auricular fibrillation occurs in all forms of cardiac lesions, whether primarily valvular or degenerative. Thus, of the cases of fibrillation, 32.8 per cent. occurred in arterio-sclerosis; 31.3 per cent. in mitral stenosis; and 23.8 per cent. in cardiac dilatation. Rheumatism and chorea play an important part in causing fibrillation. Thus, it was a preceding disease in 56.6 per cent. of all cases, the most frequent lesion to which it gave rise being mitral stenosis (46.6 per cent.). In the remaining cases of auricular fibrillation, sclerotic and degenerative cardiac changes were present.

In the absence of a rheumatic history to possibly account for such changes, enquiry was directed to other causes, namely the exanthemata, acute infection, such as pneumonia, and chronic intoxications such as syphilis or alcohol. All such diseases seemed to show relatively equal incidence, but it was noticeable that influenza occurred in 39.3 per cent. of these non-rheumatic cases.

The electrocardiographic records confirm, in all cases examined, the polygraphic tracings.—*The Medical Chronicle*.

A New Sign Described by Grocco

The sign in question consists in the appearance of minute punctiform hæmorrhages in the skin of patients suffering from purpura, peliosis rheumatica, etc., after the application of slight pressure by means of an elastic band. Professor Grocco found that these hæmorrhages occurred much more readily and under much slighter provocation in the subjects of purpura, and that the amount and degree of the artificial purpura was an index of the severity and of the progress of the disease; as the latter disappeared so it became more difficult to induce the artificial condition. Frugoni and Gingui (*Rif. Med.*, April 24th, 1911) corroborate the clinical value of his sign, and have tried to determine its pathogenesis. Does it mean an altered condition of the blood or of the vessels? It seems probable from their researches that the condition is not due to any marked change in the blood, for no such changes could be found. The alternative hypothesis—namely, that it is due to some small change in the capillaries—for example, loosening of the endothelial cells, permitting diapedesis—is the one which commends itself to the authors, although they admit it will not explain everything. Cases, for example, where no hæmorrhages could be induced by strong friction of the face, and yet were easily procured in the same person in other parts of the body, suggest a local vulnerability of the vessels rather than any general blood change.—*B. M. J.*

Cases of Pneumothorax

John M. Cruice, Physician to the Henry Phipps Institute, in an exhaustive study of cases of pneumothorax occurring there, concludes as follows (*N. Y. Med. Record*):

1. Pneumothorax occurs in the course of pulmonary tuberculosis in from 5 to 10 per cent. of all cases.

2. It occurs more frequently in men than in women.
3. It occurs most frequently between the ages of twenty and forty, at the time when phthisis is most fatal.
4. It probably occurs with equal frequency on either side.
5. The patient may assume any decubitus. Without reference to the side affected, he chooses the position in which he has the greatest comfort.
6. In the majority of cases the percussion note is hyperresonant, although tympany, dulness, or resonance may be found.
7. The breath sounds are usually absent or distant. The distant breath sounds may have any quality. In some few cases amphoric or cavernous breathing may be heard.
8. The most diagnostic signs of the condition are the coin test, displacement of the heart and, in right-sided cases, displacement of the liver. These signs occur in about 90 per cent. of the cases.
9. The succussion splash and metallic tinkle are most diagnostic, but are found in a comparatively small number of cases, about 30 to 40 per cent.
10. Pneumothorax is a most grave condition. At least 50 per cent. of the cases die within the first month. Occurring in advanced tuberculosis, it is always the beginning of the end.

Erythema Nodosum

Delearde and Hallez (*Echo méd. du Nord*) find that this condition may be secondary to some affections where tuberculosis can be excluded, and also evolving secondarily during well-marked tuberculosis, the latter being by far the commoner; secondly, it may be primary in appearance, and even benign, but the greater number of cases arise from a tuberculous soil, which is not at first apparent, but shows itself later. The authors recommend rest in the horizontal position in bed, wet compresses of water, slightly alcoholic, and covered with absorbent wool. If the pain is very severe, apply vaseline 40 grams, extract of belladonna 0.50 gram, and extract of opium 0.25 gram as an ointment and cover the limb. Sodium salicylate and potassium iodide are of value. If signs of tuberculosis are present, open-air treatment is advisable and good food and hygienic conditions.

SURGERY

IN CHARGE OF E. E. KING, G. A. BINGHAM AND
C. B. SHUTTLEWORTH.

The Internal Secretion of the Prostate

N. Lerallach and Martin Paréz (*Revista de Medicina y Cirugia Practicas*, July 7th, 1911) have carried out, at the Municipal Bacteriological Laboratory of Barcelona, a great number of experiments on dogs with the object of ascertaining the action of the internal secretion of the prostate gland. These experiments are the continuation of a series, the results of which have already been published (*Société de Biologie*, Paris, December 28th, 1907, vol. lxiii., p. 790). From these it appears that the prostate gland exercises a powerful influence upon the testicles and upon spermatogenesis. It was found that in dogs whose prostate had been as far as possible (that is, not completely) removed, the testicles atrophied, and spermatozoa disappeared from the semen. If, however, contemporaneously or previously to the removal of the gland, a portion of it was engrafted in the subcutaneous tissue of the animal, or an extract of the gland given by the mouth, these consequences were averted. It was also found that a glycerine extract of the prostate gland, injected intravenously, caused a marked testicular vaso-dilatation and spontaneous emission of semen from the vas deferens. In order to answer the objection that in these experiments the prostate was never completely removed, the authors made many attempts to devise a method of operating which would enable them to remove every vestige of prostatic tissue without at the same time vitiating the results of the experiment in other ways. They chronicle here their success in this attempt, and describe the consequences of the removal of the prostate gland complete "in the most absolute sense of the word." Here, as in the former experiments, the dogs without a prostate suffer an atrophy of the testicle and a suspension of spermatogenesis, shown during life by the absence of spermatozoa from the semen, and when the testes are examined microscopically, by the absence of the transition forms of sperm cells. Micro-photographs are shown of sections of the testes of dogs at varying periods after complete prostatectomy. At the end of about a month the semin-

iferous tubules are seen to be totally deprived of seminal epithelium, the cells of Benza are absent, and the picture is one in which all the characteristic features of a normal testicle are absent. The authors describe an experiment made with the object of demonstrating the action of the secretion of the prostate. Two puppies, as nearly as possible alike, were taken from the same mother. When they were 61 days old one of them was given daily doses of extract of prostate gland for about five weeks; the other was kept as a control. At the end of five weeks a testicle of each was removed and examined microscopically. It was found that the testicle of the animal which had taken *prostatina* was in a much more advanced stage of development than the other. Micro-photographs are given. During the progress of the experiment it was observed that a marked difference appeared in the growth and demeanor of the puppies. The one which took the extract of prostate gland was much thinner, livelier, and more inquisitive, intelligent, and excitable than the other.—*B. M. J.*

Rapid Hand Disinfection

Alexander Jeney (*Wien. med. Woch.*) points out how unsatisfactory are the usual methods of disinfection of the hands, and then describes the so-called rapid method of disinfection, devised by Dr. Konrad, which the author has found satisfactory. The solution employed is a chlormeta cresol acetone alcohol. Chlormeta cresol is prepared by the firm of Richter in Budapest, under the name of lysochlor. Enough lysochlor to make 2 per cent. of the whole is added to a mixture of two parts of 96 per cent. alcohol and one part of acetone. The hands of the operator are first washed in soap and hot water, without using a brush, for half a minute, and the nails are next cleaned; the hands are then washed for from three and a half to four minutes in the above-described solution, with the help either of a soft brush or a flannel. At the end of this procedure the skin is sterile. The solution can be used again after filtration. This method of skin disinfection was tried by Johann Turcsa at the garrison hospital, No. 16, at Budapest. One hundred aseptic operations were carried out, and healing without reaction took place in all. No sterilized gloves were used. In several cases as a further test scabs of epidermis were removed by sterile instruments partly from the hands after "sterilization," and partly from the fold of the nail. Bacteriological examination showed all these scabs

to be sterile. The method is specially suited for hand disinfection in war time, when water for mechanical disinfection may not be available in sufficient quantities. The author has seen no case in which the solution caused irritation of the skin, though the use of a brush at the preliminary washing with soap and water may cause the solution to affect the skin. The method of disinfection is simple, cheap, and quick, and should, in the author's opinion, be more widely employed.—*B. M. J.*

Administration of Anaesthetics

Darling and Williamson (*Dublin Journal of Medical Science*) state that since August, 1909, they have used hyoscine and morphine before operation in over two hundred cases as a preliminary to general anaesthesia; they have given the dose only to adults, the ordinary dose being hyoscine, 1/100 grain; morphine, 1/6 grain; atropine, 1/180 grain, hypodermically, one to three hours before operation. In young women the dose of hyoscine has sometimes been as low as 1/200 grain. The majority of patients have had the previous night ten grains each of trional and sulphonal, ensuring them quiet sleep. In fifteen minutes from receiving the hypodermic injection the patient is completely indifferent to his surroundings, and then the final preparations are made, causing him no mental distress. He walks into the operation room (when his condition permits this) without apprehension, is somewhat dazed, but replies intelligently to questions, usually takes the anaesthetic without terror or struggling, and when he wakes up some hours later remembers nothing that has happened, and is surprised that the operation is over. Many patients have no recollection of anything since receiving the hypnotic the night before. Less of the anaesthetic is required, the quieting effect on alcoholics is noteworthy, and post-operative vomiting is much less frequent. In no case have they had reason to think the dose has produced ill effects; in cardiac cases they believe it has added an element of safety. They have not given it where there has been albuminuria. About half the operations were intraperitoneal, many being very severe.—*N. Y. Med. Jour.*

OBSTETRICS AND GYNAECOLOGY

IN CHARGE OF ADAM H. WRIGHT, K. C. M'ILWRAITH, FRED.
FENTON, AND HELEN MACMURCHY.

Labour in Primiparae Over Thirty

Hesselberg (abstract report by Brandt, *Zentralbl. für Gynäk.*) published statistics of 200 deliveries of primiparae over 30 years of age in the Christiania Lying-in Hospital. The duration of labor was prolonged to from twenty-one to twenty-nine hours, the average for primiparae in the hospital being fourteen and three-quarter hours. The membranes ruptured much earlier before birth than the average two hours, the interval being from eight to over nineteen hours, increasing with the age of the patient. Notwithstanding these relatively unfavorable conditions so distinctly marked, the mortality of the mothers was not increased, nor was that of the children above the average. Whilst the average of forceps deliveries for all patients in the institution was 8.8 per cent., and for primiparae under 20 only 2.6 per cent., the percentage for old primiparae was as high as 25.4 per cent. Lacerations seemed to be rather frequent, as was *post-partum* hæmorrhage, but neither complications were markedly common. Hæmorrhage of pelvic contraction was 3.5 to 4 per cent.; in the series of old primiparae it attained 5 per cent.—*Brit. Med. Jour.*

When Shall we Operate in Puerperal Septic Infection?

J. O. Polak (*N. Y. State Jour. Med.*) urges conservatism in deciding upon surgical intervention in these cases, including their careful individualization. Nature is competent in the majority of instances to localize and circumscribe the infection. Operative procedures should be avoided if possible, and are not indicated unless there is demonstrable evidence of intrapelvic or abdominal inflammation, necrosis, or suppuration. Curettage, douches, and examinations during the acute stage break down barriers and open avenues for the further dissemination of sepsis to the myometrium, parametrium, and adjacent tissues, and the danger from curettage increases with each month of pregnancy. Enormous pelvic and abdominal exudates may disappear without operation, and in time enlarged ovaries, tubes, etc., may assume their proper size and function. As long as the patient's

general condition improves, no surgery is advisable. All operations are attended with less risk after the acute stage of the infection has subsided, and an exact diagnosis is more easily made at this time. After the uterus is thoroughly emptied, the pelvis should be left absolutely alone, and we should make every effort to support our patient, and increase her natural blood resistance. Vaccine therapy has a definite but limited field in the treatment of puerperal septic infection. Inoculation with autogenous vaccines will promise prompt results in staphylococcic and colon bacillie infections, but in streptococcic poisoning vaccine treatment is unreliable and is of value only when the virulence of the germ is attenuated, or when nature has already developed a phagocytic defence. Extraperitoneal drainage of local foci should be elected when possible, either by incision just above Poupart's ligament or by posterior vaginal section, and when this is impossible because of an inability to determine the exact anatomical relations of the local focus, an exploratory laparotomy is justifiable in order to make an exact diagnosis, and determine upon the safest route for drainage. Operative interference, in the acute stage of sepsis, is indicated only in general purulent peritonitis, postabortal pelvic peritonitis, infected tumors in or near the genital tract, and uterine rupture, when said rupture has occurred in the course of labor and has been handled outside of a well-managed maternity. Thrombophlebitis is a conservative process on the part of nature to limit the infection, and any form of pelvic manipulation only tends to break down and separate parts of these thrombi, extending the infection to the more remote parts, thus jeopardizing the patient's life.—*Amer. Jour. Obst.*

Extrauterine Pregnancy

Schauta (*Wien. med. Woch.*, No. 16, 1911) deals with the subject of extrauterine pregnancy. He distinguishes between extrauterine abortion and extrauterine rupture. By extrauterine abortion he means the discharge of the ovum into the cavity of the tube from the muscular tissue in which it is embedded; by extrauterine rupture, rupture into the general peritoneal cavity. Extrauterine abortion is usually accompanied by the passage of the blood through the fimbriated end of the tube into Douglas' pouch, with the formation finally of a retrouterine hæmatocele. The symptoms may be insignificant, and the author lays great stress upon the importance of obtaining a history of a monthly period having been missed. With tubal rupture the

symptoms are much more acute, and the unsatisfactory diagnosis of "peritonitis," with the consequent expectant treatment, could often be avoided if an inquiry as to the menstrual history were made. The treatment is always operative. In tubal abortion there is, of course, the possibility of a successful termination without operation, but since the patient is never free from danger, Schauta refuses to treat any such case on conservative lines, except in an institution. If the patient is in a private house and the need for operation occurs suddenly, the removal to a nursing home is, in any case, a severe shock, and often on arrival it is too late to operate. In tubal rupture operation should be the invariable rule, however desperate the condition of the patient. A case is described in which the patient at the time of the operation was blanched, pulseless, and looked to be dying; the abdomen was distended and no examination could be made. The diagnosis of tubal rupture was confirmed by the history of one missed period. Operation was performed and the patient left the institution recovered after eight days. The author believes that many women die from tubal rupture who could be saved by operation.—*Brit. Med. Jour.*

One Hundred Cases of Placenta Praevia

Schweitzer reports 100 cases of this complication registered in 5,603 labors in Zweifel's clinic between January 1st, 1907, and December 1st, 1910. The presentation was complete in 35 and partial in 65. The maternal mortality was 6; 4 mothers died of hæmorrhage, 1 of sepsis. The morbidity of the mothers amounted to 25.5 per cent.; 70 were free from fever in the puerperium. Neuritis was reported in 1, septic phlebitis in 2. The total infantile mortality was 35.5 per cent. Treatment was not uniform. Rupture of the membranes (5 times), combined version (30 times), dilatation with bags (39 times) were practised, as well as, more rarely, internal version, drawing down a foot, forceps delivery, and craniotomy. One patient underwent Cæsarean section by the Latzko-Zweifel subperitoneal method. The child was not viable. The patient made a good recovery. Braxton Hicks' combined version proved best for the mother—that is, if extraction be not practised immediately after turning, as the risk of deep laceration of the cervix should not be incurred. It should be completed in one stage. The average loss of blood was 335 cm. The fetal mortality was 68.8 per cent. Combined version is the right procedure when the mother is

greatly exhausted and when the child is dead or not viable. The use of dilating bags is far better for the infant; the foetal mortality was but 12.2 per cent. On the other hand, it implies two operations on the mother—the introduction of the bag and, when that is expelled, turning and extraetion. The average loss of blood, 680 c.cm., was much higher than in the 30 cases where version was undertaken. Hence dilatation is unsuited for mothers already reduced by hæmorrhage. It is the better course when the mother has not lost much blood, but the best obstetrical technique must be available and the obstetrician must not leave the patient till she is delivered. In short, *the bags are not preferable to combined version in private practice.*—*Zentralbl. f. Gynäk.*

Pruritus in Chronic Nephritis

Seeing that intense itching of the skin is often so prominent a symptom in cases in which bile is being stored in the tissues as a result of jaundice, and also in other cases in which the tissue fluids contain an excess of sugar as the result of diabetes, it would be surprising if retention of other substances besides either sugar or bile salts might not also produce itching of so widespread and intense a character as to merit the term universal pruritus. As a matter of fact, such irritation of the skin is found occasionally in an extreme degree in patients suffering from chronic Bright's disease, and the pruritus may be the first symptom that anything is wrong at all. As a rule, the kidney degeneration has been present long enough in these cases to have produced some albuminuric retinitis also, and the itching is associated with cardiac hypertrophy, accentuation of the first sound at the impulse, a ringing aortic second sound, a high blood-pressure as measured instrumentally, and the passage of an abundance of pale urine, containing sometimes a trace of albumin, sometimes none at all. The diagnosis is easy enough when the possibility that chronic Bright's disease may be the cause of the pruritus is borne in mind, but hitherto the association of the two conditions has not had that stress laid upon it that it merits. The treatment of intense pruritus is by no means easy, and the intense suffering and sleeplessness that result from the symptom may be exceedingly distressing. It has been found, however, that the pruritus of chronic Bright's disease is materially relieved by means of lumbar puncture, a procedure which may be an immense boon to the patient.—*The Hospital.*

Editorials

PRISON REFORM

Sir James Whitney laid the corner stone of the Administration Building of the new Central Prison at Guelph. More than a year ago the Provincial Government purchased 840 acres of land for the purpose of establishing a model prison farm. The aim of the Government in establishing such a farm was to improve the condition of men who had broken the law. As a rule only minor offenders against the law are sent to Guelph prison.

The Toronto News speaks as follows: "The Ontario Government is conducting at Guelph a practical experiment in prison administration. The Government have secured a farm of over 840 acres, and instead of terraces and galleries of cells barred and locked, there will be dormitories and a few cells: a dozen kinds of honest work out of doors is provided, the interest of the men is excited, and this procedure has developed men who are ashamed to escape when it is so easy, and when the public opinion of the place is opposed to a betrayal of confidence.

"In the new prison now being erected some cells will be provided for incorrigibles and for new arrivals. They are taught by experience the bitterness of cell life, then if they seem trusty they are transferred to a dormitory, and as their terms near an end to a private room. They are strong in body, healthy in mind, joyful in spirit. Not only is the prison making men of them, but the prejudice against such men as employees is dying down. Two firms competed for

a skilled workman lately discharged, one secured him at a wage rate higher than he ever commanded before.

"With Hon. W. J. Hanna in charge and Mr. W. S. Armstrong as a loyal, ardent and competent assistant, these things have been done. In practical, scientific penology the world or at least the continent must look to Ontario. For once the theory that all men have souls and 'good streaks' is exhibited, and best of all in a prison."

HEALTH MATTERS IN TORONTO

The Department of Public Health issues every month a "Health Bulletin," which contains much useful information. We learn from the September issue that the people of Toronto are eating a large number of diseased cattle each week. The Veterinarians working in the department are only able to make 116 examinations per week out of a total of 500 killed. Instead of 20 abattoirs the Board of Health thinks that the work should be concentrated in one large abattoir, which would allow efficient inspection to be made of all animals killed; in addition we find that many other foods injurious in character are offered for sale in various shapes. Mr. Awde, the head of the department of food inspection, reports a large number of confiscations during the last six months. Among these were boxes and casks of smelts, haddies, herrings, frog's legs, many crates of radishes, turnips, celery, and many barrels of lettuce, cabbage and potatoes, 1,100 loaves of bread and 681 rolls of butter.

During the month of September a number of fruit dealers were summoned to court for failing to comply

with the by-law with regard to exposure of fruit. Many of these were fined \$5 and costs each, and Magistrate Denison warned the dealers that laws were made to be obeyed, and if necessary the fines will be increased to \$50.

All cases of typhoid fever occurring during August were investigated by a special inspector. Of the 90 cases reported it was discovered that in at least 42 cases the patients were infected outside of Toronto, mostly in summer resorts and new towns in Northern Ontario.

There are 418 cases of tuberculosis under supervision by the nurses of the department. These patients and their friends are instructed as to precautions against infecting others. The department fears more the danger of infection from those cases not reported, and asks for the assistance of everybody, physicians and laymen alike, in locating such cases. The *Bulletin* tells us: "If you want our assistance, call up Main 1200 and ask for the Superintendent of the tuberculosis division, or leave your message for her."

Nearly all flies in houses are known as the common house fly. This fly deposits her eggs about 120 at a time, and from these we have in about ten days the full fledged fly. "The fly is born in filth, nourished in filth, and ever seeks out the nastiest things to eat." We are glad to know that the public is learning that the house fly, in addition to becoming a nuisance, is absolutely the most filthy thing that comes into our houses. Maggots hatched late in the season may hibernate in filth and dark places and become active in spring. It is desirable, therefore, that all flies and breeding places should be destroyed in the fall.

AMERICAN HOSPITAL ASSOCIATION

The meeting of the American Hospital Association which was held in New York Sept. 21-22 was a very successful one. The object of the Association is the promotion of efficiency and economy in hospital management. The meeting was a large one, and all the leading Canadian hospitals in the different Provinces were represented.

Among those present from Toronto were: Mr. J. Ross Robertson, Ald. Geo. McMurrich, Dr. Bruce-Smith, Dr. C. J. Hastings, Dr. J. N. E. Brown, Miss Brent, Miss Mathieson and Miss Green.

The President, Dr. W. L. Babcock, Superintendent of Grace Hospital, Detroit, pleased the Canadian delegates in his opening address by recommending for general adoption the cost system of accounting for all hospital supplies, as endorsed four years ago in Ontario by Hon. W. J. Hanna in connection with the Hospitals for Insane in Ontario.

The cost system of accounting enables an accurate check to be kept on all expenditures, and is especially valuable in making a comparison as to the cost of maintenance in different hospitals.

The improvements in hospital architecture were fully discussed, and illustrated by lantern slides and exhibits. The tendency was shown to study and improve everything likely to be labor saving in the administration and at the same time bring the greatest comfort to the patients. The absolute necessity to provide balcony accommodation so that the beds of at least one-half of the patients in a hospital could be wheeled out in the open air was referred to.

Other questions discussed were the results of look-

ing after patients discharged from hospitals, economics, hospital organization in connection with education and research, etc.

The next meeting of the Association will be held in Detroit.

SIR WATSON CHEYNE

This representative British surgeon who left Toronto last week will carry back with him to England the memory of a canoe trip such as no country other than Canada could have supplied. Starting in at Biscoutasing on the main line of the C. P. R. west of Sudbury, he and his Indian guides, accompanied by his son and by Dr. Geo. Strathy of this city, climbed by river, bay and lake to the height of land and then came down the Mississagua through the forest reserve to the north shore of Lake Huron. The writer of this note, himself no stranger to the region traversed, has described the route followed as the most beautiful canoe trip in the world. Two hundred and fifty miles of river, lake and portage, with sixty miles of rapids surely gave to our guest a startling change from Harley Street and King's College Hospital. On the way moose, red deer and timber wolves were often encountered.

Aubrey Falls, which is a series of cascades, plunges down 165 feet, and is one of the scenic gems on this too little known waterway. The photograph here reproduced was taken late in the afternoon and does but scant justice to its majestic beauty.

May we express the hope that Sir Watson will have gained in the infinite restfulness of these north-

ern wilds and on the white waters through which he came without mishap a store of energy to be used in preparing for publication a new edition of his *Manual of Surgical Treatment*—the most useful work for a practicing surgeon or for a teacher of surgery to be found in any language.—*N. A. P., Can. Jour. Med. and Surg.*

BANQUET TO DR. EMORY

When it was understood that Dr. W. J. Hunter Emory, of Toronto, had decided to take up his residence in California, the members of the Visiting Staff of Grace Hospital and some other friends tendered him a banquet. A very pleasant evening was spent at the dinner on the evening of October 5th, and one of the opinions expressed by some of those present was the fact that there was urgent necessity for increased hospital accommodation for the city of Toronto, and particularly for a class of patients who are willing to pay a reasonable sum for hospital maintenance.

Among those present were the Dean, Dr. Bruce Riordan, who presided, Dr. R. A. Stevenson, who presented an address on behalf of the Staff, and the following other members: Drs. M. Cotton, A. O. Hastings, Sylvester, Harris, McConnell, McPherson, Griffith, James Caven, Mortimer Lyon, Gilmour, Hawkins, Hardie, Noble, Clendennan, Cameron, Thomas, Treble, Clarke, Smith, Serson, McKichan, Warren, Hendrick, Temple, Wigham, Rice, Emory, Jr., Holmes, Hooper, Thompson and Baldwin, and among the guests were Mr. J. E. Atkinson, Dr. R. W. Bruce Smith and Dr. Chas. J. Hastings.

CONDUCT OF THE STUDENTS

President Falconer of the University of Toronto has written as follows:

“ The two encounters which occurred this week between the first and second years in the Faculties of Medicine and Applied Science, make it necessary for me to call the attention of the students to the university regulation which forbids such proceedings. The possibility of accidents, already this year sufficiently serious, the destruction of clothes and the use of blacking constitute these disorders a breach of regulations which may involve severer punishment than the heavy fine that has been imposed on six students who participated in the disturbances.”

LECTURES ON MILITARY TRAINING

We are pleased to be able to announce that arrangements have been made to give us a course of lectures on military subjects in the Chemical Building of the University of Toronto. The first lecture was delivered by Major Phillips, who took as his subject the Organization of the Empire's Military Forces. Among those who will deliver lectures during the winter are: Lieut.-Col. Fotheringham, who will talk about the Army Medical Corps, and Major Lang, who will talk about Engineer Service. These lectures are open to all men students of the university, and we are told by *Varsity* that it is hoped that a large number will take advantage of this opportunity of obtaining information on the defensive

forces of Canada and the Empire. The Ontario Division of the Canadian Defense League has given a sum of \$100 for prizes, one for \$50, one for \$30, and one for \$20, to be awarded to the students standing highest in an examination to be conducted by the university at the conclusion of the course.

The Persistence of Crepitations after Pulmonary Congestion

Bernheim (*Jour. des Praticiens*). It occasionally happens that on auscultating the chests of persons free from cardiac or pulmonary disease, fine crepitations are found at the base of one or both lungs, sometimes accompanied by slight blowing respiration. There may also be slightly impaired resonance on percussion in the vicinity of these crepitations extending over the lower third of the chest. In spite of these signs the patient is not ill and presents neither cough, expectoration nor dyspnoea, except occasional shortness of breath on effort.

This condition is the relic of a pulmonary disease, often of remote date, and appears to persist throughout life uninfluenced by treatment. It seems most frequently to follow influenza. Its chief importance is the liability of its discovery on the occasion of some slight catarrhal attack leading to an erroneous diagnosis of pneumonia.

No treatment is necessary beyond the avoidance of cold, damp, the infectious diseases and too great physical efforts. Where the area of lung affected is considerable, some compensatory emphysema occurs. The principal factor in the production of this condition is the presence of a chronic passive congestion of the lung, which is almost invariably a sequel of influenza. The reason for its persistence is difficult to understand in view of the complete recovery of the alveoli, even when much altered and blocked by catarrhal and fibrinous exudation. Perhaps under the influence of toxins a hyperæmia is established in which the elasticity of the capillaries is strained beyond their power of recovery and this dilatation becomes permanent, like varices.—*The Medical Review*.

Personals

Dr. W. Harper Nelson has commenced practice at 508 Spadina Ave., Toronto.

Dr. Duncan Graham has been appointed Lecturer on Bacteriology in the University of Toronto.

Dr. Chas. O'Reilly, of Toronto, returned to his home after a two months' trip to England and Ireland, October 18th.

Dr. Kennedy McIlwraith, formerly of 54 Avenue Road, has moved to his new residence, 30 Prince Arthur Avenue.

Dr. Harold Ball has returned to Toronto after a residence of one and a half years in New York.

Dr. Jane P. Sproule, M.R.C.S., L.R.C.P., London, who has been studying oto-laryngology in Vienna and London for the past fifteen months, has begun practice as a specialist at 47 Grosvenor Street, Toronto.

Dr. W. H. B. Aikins, 134 Bloor Street West, returned home the end of October after spending some weeks in Paris and London investigating the further advances in radium therapy, which have been made at the Radium Institutes in those cities.

Dr. A. L. Benedict is now the Editor of the *Buffalo Medical Journal* in the place of Wm. Warren Potter, M.D., deceased. With Dr. Benedict are associated Dr. Wende, of Buffalo, Dr. Pennington, of Rochester, and Dr. Peck, of Utica.

Dr. D. J. Gibb Wishart represented the University of Toronto at the Third International Rhino-Laryngological Congress, which met in Berlin, Germany, from August 30th to September 2nd. Nearly five hundred of the leading laryngologists of the world were in attendance. The proceedings were opened in person by the fourth son of the Emperor.

Dr. Ernst Gustav Zinke, of Cincinnati, was elected Secretary of the American Association of Obstetricians and Gynaecologists, at the annual meeting held in Louisville, Ky., Sept. 25-28. The late Dr. Wm. Warren Potter, of Buffalo, was one of the chief organizers of the Association and its Secretary up to the time of his death in June last.

Book Reviews.

Das Radium in der Biologie und Medizin von E. S. LONDON, Leiter der pathologischen Abteilung am K. Institut für experimentelle medizin zu St. Petersburg. Leipzig. Akademische Verlagsgesellschaft m. b. H. 1911.

In this small volume an attempt has been made to bring together all the literature on radium, and present it in a convenient form. Physical and chemical properties are discussed, as well as the effect of radium on the lower forms of animal and vegetable life, ferments, toxins, etc. Passing then to the higher animals, the therapeutic side is discussed. Here, as with the German schools generally, much stress is laid on the emanation. A fairly complete bibliography is added. Some twenty plates are used to illustrate the text.

While not to be compared with the excellence of the French writers on the subject, still this book will serve a very useful purpose, as showing that other schools of medicine are also finding radium an invaluable therapeutic agent.

Text-Book of Gynaecological Surgery. By COMYNS BERKELEY, M.A., M.D., F.R.C.P., M.R.C.S., Gynaecologist and Obstetrician to the Middlesex Hospital, London, and VICTOR BONNEY, M.S., M.D., F.R.C.S., M.R.C.P., Assistant Gynaecologist and Assistant Obstetrician to the Middlesex Hospital, London. 720 pages. 392 figures in the text, from drawings by Victor Bonney, and 16 colored plates. 1911. London: Cassell & Co. Toronto: D. T. McAtinsh & Co.

This book is one that should command the attention of not only the gynaecologist, but perhaps more especially the general practitioner who has occasional gynaecological operations to perform. After introductory chapters on general surgical technique, operating appliances, etc., the different regional operations are taken up in detail. Under each are given the indications for operation, the pre-operative preparation, the operative technique, the post-operative treatment, and the dangers to guard against, with the complications that may possibly result and their treatment. Operative steps are illustrated in black and white, while several colored plates have been carefully selected. The work reflects the practice of gynaecology at the Middlesex Hospital, and is dedicated to William Duncan

and John Bland-Sutton. The book is a most valuable one, and should be on every physician's bookshelf.

The Sensibility of the Alimentary Canal. By ARTHUR F. HERTZ, M.A., M.D., F.R.C.P., Assistant Physician and Physician-in-charge of the Department for Nervous Diseases, Guy's Hospital. 83 pages. 1911. \$1.50. London: Oxford University Press. Toronto: D. T. McAinsh & Co.

In this small monograph will be found much of interest and profit both to the practitioner and physiologist. The clinician will probably find that many of his ideas on this subject will have to be changed after a perusal of this volume, for the subject is presented in such a way that one cannot help but agree with the writer. There are seven chapters dealing with Tactile, Thermal, and Chemical Sensibility, the sensations of fullness, emptiness, pain, and variations in sensibility. An index of authorities is added. It is an example of the kind of work that is needed to link up more closely the work of the research student with that of the clinician.

Syllabus of Bacteriology; a compact treatise to aid the Physician in the Microscopic Diagnosis of Disease. Illustrated. Published by the Palisade Manufacturing Co., of Yonkers, N.Y.

It is astonishing how little we appreciate that which may be had for the asking. So many of us, particularly in these sordid times, measure the value by the cost, but in this little brochure or syllabus there is contained concentrated information, up-to-date, beautifully illustrated, accurate, and should be of the greatest aid to the practitioner. It can be had simply for the asking, so write and get one if you do not already possess one.

Obituary

DENNIS P. LYNCH, M.D.

Dr. D. P. Lynch, of Almonte, Ont., died August 11, age 57. He graduated M.D. from Queen's in 1878.

WALTER ARMSTRONG, M.D.

Dr. Armstrong, of Uxbridge, died August 20, age 51. He received his education in the Toronto School of Medicine and graduated from Victoria University in 1887. After practising in Zephyr nearly twenty years he removed to Uxbridge about four years ago.

W. C. LITTLE, M.D.

Word was received by cablegram, Oct. 6th. that Dr. W. C. Little, son of Mr. Robert Little, of Toronto, died on that day at Warracknabeal, Australia. He received his medical education in the Toronto School of Medicine, and soon after graduating in 1899 went to Australia, where he remained up to the time of his death.

GORDON MCGREGOR SINCLAIR, B.A.

Mr. Gordon Sinclair, who graduated in Arts and passed three years in Medicine, died at his father's residence, Toronto, October 18th. He had been in rather poor health for a year, but no serious result was anticipated until a few days before his death, when pneumonia set in.

PROFESSOR GEORGES DIEULAFOY

Professor Georges Dieulafoy died in Paris on August 18. He was one of the leading clinicians of France, a pupil and worthy successor of Trousseau. He was born in Toulouse in 1839, but passed all his medical life in Paris. He was professor of clinical

medicine at the Faculté de Médecine, attending physician to the Hôtel Dieu, and member of the Académie de Médecine. His "Manuel de Pathologie Interne," of which sixteen editions have been published in France, has recently been translated into English.

ALEXANDER HUGH FERGUSON, M.D.

It was reported several weeks ago that Dr. A. H. Ferguson, of Chicago, was seriously ill, and an operation was performed. According to subsequent reports his recovery was slow, but after a steady improvement prospects seemed bright, and he was nearly ready for active work. In order to save himself to some extent from the effects of "high pressure" he formed a partnership with his chief assistant, Dr. Monahan. Great was our surprise and sorrow to learn, October 21st, that he died on the previous day, i.e., October 20.

Dr. Ferguson was a Canadian, born in the County of Ontario, Province of Ontario, and received his medical education in Trinity Medical College, Toronto, graduating M.D. from Trinity University, and M.B. from University of Toronto in 1881. Soon after graduating he went to Winnipeg where he practised with success for a few years. He then went to Chicago and confined his work entirely to surgery with such success that he soon became one of the leading surgeons of that great city.

CHARLES TROW, M.D.

In the Toronto daily papers of Oct. 9th, there appeared a report of a contest between the Rosedale and Lambton Golf Clubs, on the afternoon of October 7th. Dr. C. Trow played against Mr. Bertram, the result being "all square." On another page of the same newspaper was found a report of the sudden death of Dr. Charles Trow on the morning of October 8th.

Dr. Trow received his medical education at Trinity College, Toronto, graduating in 1885. After spending a year as resident physician in the Toronto General Hospital he went to England in the fall of 1886. While in London he did much post-graduate work and became L.R.C.P. in 1887. He also spent considerable time in Paris, Berlin and Vienna, working chiefly in his chosen specialty, Diseases of the Eye, Ear, Nose and Throat. He returned to Canada in 1890 and at once commenced practice. He

received the degree of M.D. from the University of Toronto in 1891.

He was successful in practice, and soon joined the Staff of the Toronto General Hospital and that of Trinity Medical College. At the time of his death he was still connected with the hospital, and was Associate Professor of Ophthalmology and Otology in the University of Toronto, and was Chairman of the Section in Ophthalmology and Otolaryngology in the Toronto Academy of Medicine.

We have no words to describe the shock we experienced and the sorrow we felt when we heard that our dear friend Charlie Trow was dead.

Charlie Trow was undoubtedly one of the most popular physicians that Toronto has ever known. He had a great host of friends both in and out of the profession, and was a keen sportsman, being especially well known as a curler and golfer. He was a great, big-hearted, lovable man whom everybody liked, and whom we who are left will miss more than we can tell.

DR. F. W. PAVY, OF LONDON

The passing away of Frederick William Pavy, M.D., LL.D., F.R.S., in his 83rd year, on the 19th inst., has deprived the medical world of one of its most distinguished leaders. Born in Wiltshire, Dr. Pavy was educated at the Merchant Taylors' School and at Guy's Hospital, where his conspicuous abilities were soon recognized, being appointed, after taking the M.D. Lond. in 1853, Assistant Physician and Lecturer in Physiology, Comparative Anatomy, and Zoology.

He soon began to occupy himself in endeavoring to investigate what was then an almost untrodden ground of physiological inquiry—namely, the relationship of diabetes to the metabolism of the carbohydrates. For many years Dr. Pavy was the chief European authority upon all questions connected with diabetes; and, besides many contributions to learned societies and to scientific journals, he published an extensive work upon the subject. He was elected a Fellow of the Royal Society; and, having in due course become full Physician to Guy's Hospital, he abandoned his earlier lectureships for that of medicine, which he filled with great acceptance for many years. He was elected President of the Royal Medical and Chirurgical and of the Pathological Society; and held various offices at the Royal Col-

lege of Physicians, of which he was a Fellow. He delivered the Gulstonian Lectures to the College in 1862 and 1863; the Croonian Lectures in 1873 and 1894; was Harveian Orator in 1886; and received the Baly Gold Medal in 1901. He was President of the Association for Advancing Medicine by Research, and of the National Committee for Great Britain and Ireland of the International Medical Congress. Besides his work on diabetes, Dr. Pavy wrote upon digestion, upon food and dietetics, and upon the physiology and metabolism of the carbohydrates.

Dr. Pavy was held in high esteem by the medical profession, and his 80th birthday was made an occasion for a very general expression of admiration of his work.—*The Medical Press*.

Antistreptococcus Serum

Antistreptococcus serums were found by Weaver and Tunnicliff (*Jour. of Infectious Diseases*) to lose their opsonic power rapidly, which may for some time be largely restored by the addition of fresh human or guinea-pig serum. Guinea-pigs may be protected against virulent cultures of streptococci by previous injection of antistreptococcus serums. The protective power of immune serums continues so long as they can be reactivated by fresh serum. Injections of immune serums in guinea-pigs may be followed by increased activity of leucocytes of short duration and by an increased opsonic power for streptococci in the blood-serum persisting for about ten days. The immunity in guinea pigs produced by injection of immune serum persists for about eight days. Of three fresh commercial serums manufactured in the United States which were tested two were active and one inactive. The two European serums were active. Fresh normal human serum and fresh human serum from persons infected with streptococci are able to reactivate anti-streptococcus serums. This indicates that such serums may have some protective and curative effect in man in cases of streptococcus infections. The specific antistreptococcus bodies are resistant to heat and chemicals (trikresol, 0.4 per cent. chloroform) and are closely associated with the pseudoglobulins of the immune serum. The authors stated that it would be desirable to have some guarantee of the activity of antistreptococcus serums offered for sale.—*J. A. M. A.*

Selections.

Exophthalmic Goitre in Men

Pic and Bonnamour (*Rev. de Méd.*): This disease is rare in men, as the statistics collected by the authors of this paper show. Of 563 cases collected by Pic and Bonnamour from the literature, 109 were in men. No mention is made by the authors of the monograph by Buschan, who collected 980 cases from the literature, since which time, up to 1903, 229 other cases had been published, making 1,209 in all, the ratio of men to women being as 1 to 4.6 (212 M.—997F.).

Age.—Of the 109 cases collected by the authors it is stated that the largest number occurred between 30 and 50 years of age, but the figures quoted by them show that the greatest number occur between 20 and 40, as follows: 24 cases between 20 and 30, 24 between 30 and 40, and 21 between 40 and 50. This also coincides with the 692 cases published by Buschan, and since that date by various authors, namely 53 between 21 and 40. The authors state that in women, on the contrary, the disease is much more frequent in early life; the 692 cases mentioned above do not show this, as 325 of these occurred between 21 and 40, and the rest of the cases were divided over various ages up to 70. The authors only found two cases at the extremes of life. Here again a more extensive research into the literature would have found that 5 cases occurred before the age of 10, and one between 60 and 70.

Predisposing and exciting causes.—Nervous affections, epilepsy, hysteria, neurasthenia, have been frequently noticed in the ancestors. Mental and physical overstrain, emotions, fright have all been cited as predisposing causes. Infectious diseases, as rheumatism, typhoid fever, syphilis, tuberculosis, play the chief part as exciting causes.

Symptoms.—The authors lay stress chiefly on the most important symptoms met with in the male sex. The most frequent phenomenon is tachycardia. Palpitation is common, and tremors nearly always present. Goitre is also very frequent, and if unilateral, is more common on the right side than the left. The appetite is very poor as a rule, but sometimes there is bulimia. Attacks of diarrhoea are common. Wasting frequently comes on early and may be considerable. The most striking phenomenon in men is the presence of nervous symptoms: there is a marked state of unrest, excitability and irri-

tability, the slightest noise is apt to excite him, and the smallest emotion immediately may provoke an outburst of anger. Ideas of persecution, hallucinations or even convulsions may occur. Exophthalmos may be entirely absent.

Prognosis.—The disease is much more rapid and the outlook much more serious than in women. Pneumonia frequently ushers in a fatal termination. The statistics quoted by the authors show the gravity of the disease very distinctly.

Pathogeny.—The authors suggest that, as has been shown, there is an antagonism between the ovary and the thyroid body, the cause of the gravity of the disease in the male sex is the absence of this antagonistic action.

Treatment.—Remedies appropriate to the disease should be employed early and actively, and if powerless for good, the authors recommend surgical intervention.—*The Medical Chronicle.*

The Value of Rectal Feeding

Although during the past decade a number of researches have been published which seemed to prove beyond doubt that so-called rectal feeding is, from the standpoint of nutrition, a practically useless measure, we believe that a large number of the profession still resort to it whenever the condition of the stomach is so deranged, as a result of functional or organic disease, that it is unable to deal with or retain food. Thus, rectal feeding is often used in cases of gastric ulcer, gastric carcinoma, and obstinate vomiting, whether it follow the use of an anæsthetic, whether it be due to uræmia, or whether it complicates the course of pregnancy.

On a number of occasions during the past ten years we have called attention to the researches to which we have just referred in the editorial or Progress columns of the *Gazette*, and increasing experience has led us, from the standpoint of the clinician, to place much confidence in the view that the patient who is thought to be fed by an injection into the rectum of pre-digested foodstuffs is in reality starving, almost, if not quite, as severely as the patient to whom rectal injections are not given. On the other hand, it cannot be doubted that the injection into the rectum of normal salt solution, or of solutions containing nutritious substances, provides the body with a certain amount of liquid which is necessary for its existence, keeps the tissues bathed in their essential fluids, and provides the kidneys with liquid in which they can excrete the solids which

it is their duty to get rid of. Almost every clinician of experience knows very well that when a predigested enema of milk and eggs is given, practically all the solid material can be passed or washed out of the bowel twenty-four hours afterward, although all of the liquid may have been absorbed.

In the *Proceedings of the Royal Society of Medicine* for April, 1911, Dr. Brown has reported the results of an investigation which he has carried out upon this subject, and his conclusions are in accord with those who have investigated this field of nutrition in previous years. Dr. Brown concludes that not infrequently rectal injections are the cause of a gain in weight, but this gain is due rather to the absorption of fluid than to the absorption of foodstuffs. It is true that the introduction of dextrose in not more than 5-per-cent. strength in normal salt solution results in all probability in the absorption of a considerable amount of this foodstuff, or at least of a sufficient quantity to put off or prevent the development of starvation acidosis. This is an important consideration, because we have been too prone in the past to ignore starvation acidosis, and to consider it as occurring only as a complication of diabetes, or more recently as a sequel to the administration of chloroform. If more than 5 per cent. of dextrose is used, it is apt to cause irritation and pain.

Referring once more to the matter of how much foodstuff can be absorbed by way of the rectum, it is interesting to recall the fact that Boyd reached the conclusion that it was possible, under very favorable circumstances, to provide the body by this means with about one-ninth of the number of heat units which are necessary for the maintenance of weight. But this possibility is only present in those who do not suffer from rectal irritability and are in the most favorable class for rectal alimentation.

We also regard with a good deal of satisfaction and approval the opinions expressed by Dr. Brown, in the article to which we have just referred, concerning other matters associated with the question of rectal alimentation. He well points out that thirst can be relieved by the use of a saline injection better than by the use of a nutrient enema, and that thirst can also be diminished by hypodermoclysis. Then, too, rectal alimentation is a difficult thing to carry out without producing a condition of uncleanness in the bedding. The exposure which it necessitates, if the injection is to be given skilfully, is objectionable, particularly if patient and nurse are of an opposite sex. Again, in cases of gastric ulcer, it would seem probable that nutrient

enemata may be distinctly disadvantageous in that they cause reflexly a free secretion of gastric juice, which is exactly what the physician wishes to avoid when gastric ulcer is present and he is resorting to rectal alimentation.

Another important point which is not to be forgotten in some cases in which rectal alimentation is practised for a long period of time is the fact that vomiting may become persistent as a result of intoxication arising from starvation. In these instances the vomiting is to be checked, not by continuous starvation, but by a recognition of the fact that the vomiting of acidosis is more dangerous than the gastric condition for which the starvation was instituted. In other words, the time comes when the persistent use of feeding by the rectum not only does no good, but may actually do harm, in that a condition of the system is produced which is far worse than the primary one for which treatment was instituted.—*The Therapeutic Gazette*.

Chemotherapy of Pneumococcus Infection

Morgenroth and Levy (*Berliner klinische Wochenschrift*) believe that bacteria are in reality as amenable to a *therapia sterilisans magna* as are certain kinds of protozoa. The power of quinine over the latter is well known, and this drug has been used extensively in large doses in various bacteriogenic diseases, especially in pneumonia. We have here the germ of an idea of finding in quinine derivatives remedies which will disinfect the organism of certain bacteria. The authors have satisfied themselves that quinine itself is not in the slightest degree bacteriotropic toward the pneumococcus. A quinine derivative known as ethylhydrocuprein having shown itself—along with other derivatives—to be similarly inert, it was finally ascertained that the sulphate salt of this body possessed undoubted prophylactic and curative influence over laboratory pneumococcus infection in mice. This compound is by no means looked upon as anything more than a step in the right direction. A further study of quinine derivatives may lead to the discovery of a drug having power over croupous pneumonia in man. Such a remedy would doubtless be used in connection with an antitoxin for it has been shown satisfactorily that antibodies are responsible for the cure of pneumonia by crisis. These quinine derivatives should also possess a field in streptococcal infections.—*Medical Record*.

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Original Communications

A CASE OF ACROMEGALY

BY GRAHAM CHAMBERS, M.B., TORONTO.

Physician, Toronto General Hospital; Associate Professor of Clinical Medicine,
University of Toronto.

This disease was first described in 1886 by Pierre Marie, who proposed the name *Acromegaly* (from akron, extremity, and megas, large), as descriptive of the affection, inasmuch as it was especially characterized by hypertrophy of the hands, feet and face. Three years later, in 1889, the same investigator called attention to the fact that an hypophyseal enlargement (adenoma or hyperplasia) frequently accompanied the skeletal overgrowth. This observation has been repeatedly confirmed; and further, it has been shown by Massalongo, Meige, Woods Hutchinson, and Basso, that when this disease of the pituitary body commences in youth, gigantism occurs. These observations appear to indicate that both acromegaly and gigantism are the effects of a tumor of the hypophysis. It has been shown, however, that a tumor of the pituitary body may be present, unaccompanied by skeletal changes, and a few cases of acromegaly have been reported in which no change was found in the hypophysis.

In explanation of these observations, three theories were advanced. Some thought hyposecretion of the gland was the cause of the enlargement of the extremities; others, that it was hypersecretion; others again, that the enlargement of the pituitary body was due to the same agent which caused the skeletal changes. I may state that it was only recently that it was decided in favor of the second view, i.e., that hypersecretion of the hypophysis—hyperpituitarism—is the causative agent. For this decision we are especially indebted to Hoehenegg, Cushing,

and other surgeons who have demonstrated that removal of an hypophyseal tumor in cases in acromegaly frequently results in diminution in the size of the extremities. With this theory one can explain fairly well all the facts known with regard to the pathogeny and symptomatology of gigantism and acromegaly. In order to be in position to do this, however, one must be familiar with the anatomy and physiology of the gland. Before proceeding, therefore, to report the history of the case which is the object of this paper, I shall briefly refer to certain facts concerning the embryology, anatomy and physiology of the gland.

EMBRYOLOGY.

The pituitary gland is formed by hollow extensions from both the buccal and neural ectoderms. These extensions grow together and form the pituitary gland, or hypophysis. The part derived from the buccal ectoderm, losing its connection with the alimentary tract, forms the *pars anterior* and *pars intermedia* of the terminology of Herring; and the part from the neural ectoderm develops into the *pars nervosa* of the same authority. In some animals, and in the human fœtus, the *pars nervosa* retains, by means of the infundibulum, its hollow connection with the third ventricle, although in man it becomes entirely solid.

ANATOMY.

According to the teaching of Herring, the pituitary body may be divided into three parts, namely, *pars anterior*, *pars intermedia*, and *pars nervosa seu posterior*.

The *pars anterior* in man is separated from the posterior part by a cleft-like cavity, the remains of the hollow of the invagination from the buccal cavity. It is made up of columns of epithelium-like tissue, separated from one another by sinusoidal channels, lined with endothelium, and connected with the vessels which bring blood to and conduct blood away from this part of the hypophysis. The microscopical appearance of the *pars anterior* suggests that the tissue has the property of forming a secretion which passes directly into the blood stream, which, we shall see later, is believed to be the case.

The *pars nervosa seu posterior* consists mainly of neuroglia and a few blood vessels, and shows no tissue which can be supposed to have either glandular or nervous activity.

The *pars intermedia* is composed of epithelial tissue, situated principally behind the cleft and impinging on the *pars nervosa*. The epithelial tissue is arranged in islets, which may be solid or hollow in structure. The hollow islets contain "colloid," which is also contained in spaces in the tissue between the islets

and of the adjacent parts of the pars nervosa. The colloid may even be seen discharging into the infundibulum. The structure of the pars intermedia suggests that its secretion does not pass directly into the blood, but into the infundibulum, which connects with the third ventricle. It would appear, therefore, that the secretion of the pars intermedia is discharged into the cerebro-spinal fluid.

PHYSIOLOGY.

Our knowledge of the physiology of the hypophysis has been obtained by experimentation on animals, and also by clinical observation on cases of acromegaly and gigantism. Among those who have contributed, the names of Pierre Marie, Herring, Schäfer, Cushing, Hochenegg, Howell, and Paulesco deserve special mention. Time will not permit me to call attention to the contributions of each investigator, and I shall therefore give merely a summary of our knowledge of the subject at the present time.

1. The pars anterior is essential to life.

2. The essential function of the pars anterior is nutritional in character, being especially related to the growth of skeletal tissues, including cartilage, bone and connective tissue. These metabolic processes are probably carried on by hormones secreted directly into the blood. These hormones probably act by sensitizing the formative cells to stimulants. In acromegaly and gigantism there is hypersecretion of the pars anterior, which would render osteoblasts and other formative cells hypersensitive to ordinary stimulants. In this way one can account for the hypertrophy of bone and other skeletal tissues in acromegaly being principally situated in parts most exposed to stresses, such as the hands, feet, ascending ramus of jaw, alveolar processes and sites of insertion and origin of muscles and ligaments.

3. The secretion of the pars anterior is in some way connected with the metabolism. This may be inferred from the fact that in acromegaly there is frequently present a deficiency in power to metabolize sugar, alimentary diabetes being common. In our case the capacity to metabolize sugar is normal, but defective metabolism is present, inasmuch as creatine is continuously present in the urine. This latter observation was made by Dr. A. W. M. Ellis, University of Toronto.

4. The functions of the pituitary gland are in some way related to those of thyroid. This statement is supported by the following facts:

- (1) Removal of either gland tends to produce hypertrophy of the other.

(2) Acromegaly is frequently associated with myxœdema.

5. Hyposecretion of the pars anterior probably results in adiposity, deficient growth of hair, infantilism, hypoplasia of the genitals, tendency to subnormal temperature, lethargy, predisposition to infection and other symptoms of apituitarism, as described by Cushing.

6. The pars intermedia and pars posterior do not appear to be essential to life.

7. The function of the pars intermedia is related to the secretion of urine, regulation of action of heart, and maintenance of blood pressure. These effects are probably produced by means of hormones secreted in the "colloid." An extract of the pars intermedia and pars nervosa injected into the veins produces a rise of blood pressure comparable to that produced by an extract of the suprarenal bodies. If a second dose be given within a short time (half an hour to two hours) after the first, the rise in blood pressure may not occur. The diuresis is principally due to rise in blood pressure associated with dilatation of the vessels of the kidney, but partly to direct stimulation of the renal cells.

The action of the extract does not appear to be constant, and it is possible that there are several hormones in the colloid which may act antagonistically.

SYMPTOMATOLOGY.

With regard to the symptomatology of acromegaly it should be remembered that the syndrome of the disease is made up of, not only the manifestations caused by disturbance of function of the pituitary body, but also those resulting from the presence of a tumor in the circle of Willis at the base of the brain. From the position of the tumor one should expect to find symptoms of tumor of the brain and also focal symptoms, such as bitemporal homanopsia, contracted field of vision, and amblyopia, which, indeed, are frequently present.

CLINICAL HISTORY OF A CASE.—HISTORY TAKEN BY ROBERT BUTTERFIELD, M.B.

E. A., aged 39, female, married, was admitted to Toronto General Hospital on Jan. 16, 1911.

Complaint—

- (1) Cough.
- (2) Bitemporal headache and a feeling as if the head were too heavy for the body, also dizziness.
- (3) Failing eyesight.
- (4) Swelling of hands and face.

Duration of Complaints:

Cough has been present for six weeks; the headache and defective eyesight, nine months; the enlargement of the hands and face, about three years.

Family History.—Father alive, aged 70; mother dead, aged 69, cause being pneumonia. Two sisters and one brother alive and well. No brothers or sisters dead. Husband had syphilis.

Previous History.—Patient had measles when a child. Between 12 and 17 had quinsy several times, and suffered from "growing pains." At the age of 15, while living in Manchester,



England, had a "black skin" removed from the right eye. Menstruation began at the age of 19 and continued until the age of 28, the date of her last confinement. During recent years had suffered from quinsy, and has had an attack of acute rheumatism. Patient was married at age of 21, and lived with her husband for eight years, during which period she had two miscarriages and gave birth to a still-born child and another with active syphilis. At 30 had an operation for falling of the bladder and womb.

Present Illness.—It is about three years since patient first

observed enlargement of the hands and face, but for two or three years previously she had suffered from weakness. One of the first incidents to attract her attention was her inability to remove her wedding ring, which compelled her to have it filed off by a jeweler. After this she purchased a new one, which was the largest size of man's ring. About the same time she was compelled to have the bridge of her eyeglasses widened. Her friends about this time observed enlargement of the face and an increase in size of the body generally. She attended the outdoor clinic at Rochdale Infirmary for twelve months. The patient states that the physician in charge of clinic thought she was suffering from myxœdema. Treatment, however, gave her no relief, and the weakness and enlargement of her hands and face generally increased. About nine months ago patient began to suffer from headache, dizziness and failing eyesight, which complaints have continued and gradually grown worse to the present date.

Present Condition.—(a) General—The patient has the appearance of a woman of forty-five years, and presents features of a masculine type. Speech is slow and her mentality sluggish. Posture is somewhat bent, which is due to a forward curvature of the upper part of the spine. The skin is moist, and in the face presents a pasty, yellowish tint. In the lumbar region there are several soft, pedunculated fibromata attached to the skin. The hair of the scalp is coarse and thick; that of the eyebrows and eyelids is short. The subcutaneous tissue all over the body is thickened. The face of the patient is unusually large for a woman, and presents considerable asymmetry, the left side being the more prominent. The lower part of the face is broad and the forehead relatively narrow and somewhat receding. The lower jaw projects forward so that its incisors are half an inch in front of those of the upper jaw. The nose is long and broad, with large nostrils. The supra-orbital and the temporal ridges, the malar prominences, the parietal and frontal eminences are prominent. The ears are very large. The lips are large, the lower being considerably everted.

The neck of the patient is thick, but presents nothing unusual except a very prominent larynx.

The upper and lower arms present no striking features, but the hands are very large, with coarse skin and markedly distinct linear grooves on the palms. The thenar and hypothenar eminences are very prominent, and the pads in front of the proximal phalanges are thickened. The digits are short and stubby, but there is no clubbing of the ends. The nails are flat, but not enlarged.

The feet show much less enlargement than the hands. The heels and great toes are relatively increased in size. The size of the legs and thighs appears to be about normal.

The thorax appears increased in depth antero-posteriorly and flattened laterally. The sternum at the fourth rib is about three inches in width. On the patient sitting down the costal margin reaches the crest of the ilium. The obliquity of the lower ribs is greater than the normal, and the intercostal spaces very narrow.

(b) Special.—Nervous System.—Intellection is below the



average. Memory is poor for recent events. Patient does not sleep well, and at times is very irritable and depressed. Occasionally has hallucinations of sight and hearing.

Eyes.—Fields of vision much diminished; color fields are contracted and interlace; visual acuity diminished; pupils are equal, round, and react to light and for distance; pseudonystagmus present; no ptosis; slight proptosis; movements good; no optic neuritis.

Cranial Nerves.—Patient has lost the sense of smell. All other cranial nerves normal except the optic, and possibly the acoustic. The hearing is defective and tinnitus is present.

Reflexes.—Rhombeg sign present, and movements of left

arm are slightly ataxic. All the reflexes are present, but depressed, especially on the left side.

Motor Function.—Movements are sluggish, but no paralysis present.

Sensory Function.—Sensations to the various stimuli appear diminished in the forearms, hands, nose, middle of forehead and upper part of chest and back. These areas, however, do not correspond to the distribution of the peripheral nerves or nerve roots.

Alimentary System.—The mouth, tongue and throat appear unusually large. The hard palate is highly arched, and the alveolar processes much elevated. In the upper jaw the incisors and canines are almost in a straight line, and are not in close contact with one another. When the jaws are closed the teeth do not interlock, the lower incisors projecting half an inch forward, and the lower molars being set outside those of the upper jaw.

The tongue is large and pale, and presents on its dorsum longitudinal and transverse fissures. The lingual tonsils are considerably hypertrophied. The size of the soft palate is increased in proportion to the other structures of the mouth. In the naso-pharynx the remains of adenoids are present.

The patient complains of loss of appetite, but there are no physical signs of disease of the stomach or intestines. The liver is enlarged, extending in the left mammary line from the third interspace to an inch below the costal margin.

Genito-Urinary System.—The labia-majora and vagina appear unusually large, and the uterus relatively small.

The urine is free from albumin and sugar. Sugar is absent, even after the ingestion of 100 grammes of grape sugar. Creatine is constantly present.

Respiratory System.—The voice is coarse and low-pitched. The epiglottis, arytenoids and thyroid cartilage are enlarged. The vocal chords appear thickened, and fail to approximate posteriorly. Physical examination of chest reveals no sign of disease.

Circulatory System.—The palpable vessels are not thickened. The rate, rhythm and wave of pulse are normal. Systolic blood pressure, 150. The apex beat is in the fifth interspace, just outside the mammary line, and is five inches from the mid-sternal line. At the level of the fifth, the cardiac dullness extends five inches to the left of the middle line. At the apex the first cardiac sound is long and loud and second accentuated, indicating hypertrophy of the heart. The examination of the blood shows nothing abnormal.

X-RAY EXAMINATION.

Skull: (1) The antero-posterior diameter of the skull appears relatively long and the skull low and somewhat flat.

(2) Sella turcica is increased in size.

(3) Irregularities in thickening of bones of vault.

(4) Enlargement of alveolar processes of both jaws.

(5) In the lower jaw the angle is very obtuse and the ascending ramus very long. The horizontal ramus projects forward beyond the upper jaw.

Hands: No irregularities, but the bones appear generally enlarged, especially the first three metacarpals.

SURGICAL TREATMENT OF INFANTILE PARALYSIS*

JOHN R. PARRY, B.A., M.B., HAMILTON.

The first essential in the surgical treatment of infantile paralysis is the prevention of deformities. If this is successful, and it should be, recovery takes place sooner and to a greater extent. Then only those procedures which aim at restoring muscular power, or the stability of limbs or fixation of joints, would be required.

The limbs must be so placed that the paralyzed muscles are kept relaxed. Partially or apparently entirely paralyzed muscles will never recover as long as they are kept on stretch. If there is extensor paralysis of the wrist it should be placed upon a Thomas splint and kept slightly hyperextended to relax the extensor muscles. In paralysis of biceps of arm the elbow should be at right angles or less, the forearm supported in a sling. In toe-drop the ankle should be held flexed at little less than right angle by a light brace or right-angled foot-piece. In paralysis of quadriceps extensor a posterior splint held to the leg by a few strips of adhesive plaster should be applied. If possible, a bandage should not be applied, for this lessens the circulation directly and interferes with muscular nutrition by circular compression. In producing the deformities there are two factors: 1st, action of gravity; 2nd, insufficiently opposed muscular action, which allows the healthy muscle to contract. In order to counteract the action of the healthy muscles, alcoholic injections may be made into the nerves supplying these muscles. By this means the healthy muscles are temporarily thrown out of action. Meanwhile the opposing muscle is exercised, so that by the time the nerve is regenerated the muscular force has somewhat transferred to the opponent group.

As soon as the painful stage has passed—it lasts from a few days to several weeks—means for the stimulation of nerves and muscles must be applied. These consist of electricity, baths, high degrees of heat, massage and muscle training. The last two—massage and muscle training—are necessary; the others may be carried out if convenient and if done in a scientific manner. Massage is easily performed, and the parent can be taught in a few moments how to do it. With a powder or an oil the limb should be briskly rubbed for two or three minutes, then for about ten minutes the muscle should be grasped and pinched

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between fingers and thumb. This should be done two or three times a day.

Muscle training is the most effective means of helping a return to power of the paralyzed muscles that we possess. In infants this is best carried out at first in a warm bath. The child is encouraged to kick and splash. Movements are here much more easily performed, as the water helps to support the weight of the limbs. In older children the part to which the muscle belongs is put through passive movements, and then the patient is directed to attempt active movements in the same direction. In this at first he will have to be assisted, so that they are only partially active movements. Later, if the muscle improves, assistance will not be necessary.

In paralysis of the lower extremities the patient is soon put in walking instruments, and these really provide here the best form of muscle training. Before this is done, any contractions that may exist are corrected. If the paralysis is of a year's standing the different tendon and muscle transplantations should also be done. Arthrodesis is preferably done after the child is ten years of age. To be sure, the instruments should be as light and simple as possible and should at first only be worn for a short time each day, and any tendency to deformity carefully looked for and corrected. Practically every paralytic can be taught to walk. All the muscles of both extremities save one iliopsoas may be paralyzed, and yet with this one muscle acting the patient will in time be able to walk in instruments. In severe cases the patient will have to learn to balance himself. At first he may be supported by an assistant, by the use of crutches, or by a modified baby-tender. In time he will be able to dispense with all except a cane, and in many cases where paralysis has been limited, to do without instruments entirely.

Certain muscles or groups of muscles are more frequently paralyzed than others, and I shall only deal with the more frequent types. The lower extremity is affected more often than the upper. In the lower the frequency is: first ankle, then knee, then hip, and in the upper, shoulder, elbow and wrist.

First of all, a word as to tendon and muscle transference. Opinion is not unanimous regarding the usefulness of this operation. Certainly the results are not so brilliant as one would expect. Yet we must recognize the condition we are treating is a very serious one, and any little improvement should be gratefully received. Muscle transference brings no increase of power except through muscular development. It merely permits the restoration of an important lost function at the expense of one

or more less important ones, thus securing improved action in a part which is still paralyzed. For the operation to be successful one must select the cases. One should not perform the operation where paralysis is very extensive, nor should one use weak or partially paralyzed muscles as reinforcers. Any deformities must have been corrected some time previously. The reinforcing tendon should be well freed, it should not bend around an angle, and it should be firmly fixed to its new attachments. A careful and prolonged after-treatment should be carried out. If these points are taken into consideration a much improved limb may be expected as a result of the operation.

TREATMENT OF INDIVIDUAL PARALYSES.

Paralysis of extensors of wrist and hand. In cases that have been properly treated there will be no contraction of the flexors, and deformity will thus have been prevented. In cases that recover there will be a return of power within a year. However, if by that time there is none, operative measures may be undertaken. One cannot make use of flexor and intrinsic muscles of the hand unless the wrist is extended. Extension may be provided in two ways:

1st. By transplanting the tendon of the flexor carpi radialis and fixing it into periosteum at the base of the second metacarpal bone, and the tendon of the flexor carpi ulnaris into the periosteum at the base of the fifth metacarpal bone. If the tendons are not sufficiently long to furnish a periosteal insertion, the tendon can be elongated by means of silk strands, according to the method of Lange. Strong silk threads are passed through the ends of the transplanted tendons above and through the periosteum of the metacarpals below.

2nd. By the removal of an oval piece of skin from back of wrist—Jones' operation.

The hand should be maintained in a position of hyperextension for a couple of months, massage and muscle training being carried out several times daily.

In neglected cases where flexors have contracted and extensors stretched—dropped wrist—we test as to its possibility of recovery. The wrist is in a position of flexion, the surgeon further flexes the wrist, and then asks patient to move wrist to its original position. If this is possible, such a case, no matter how long the duration, a fair prognosis can be given. The forearm and hand is put up in a malleable Thomas splint and the hand slightly extended every few days. After a time the surgeon is able to get the hand hyperextended, and in this position it

should remain for several months. Massage is applied to the muscles of the forearm. A return of power is noticed by the patient being able to lift the hand from the splint. In from one to two years a very useful hand obtains.

If in the test as to possibility of recovery it is shown there is no power in the extensors, the hand should be hyperextended and either tendon transference or Jones' operation should be performed, as described above.

Paralysis of the deltoid, supra and infra spinatus, biceps and the supinators. Paralysis of the upper arm type of Erb. This is distinctly a paralysis affecting the muscles supplied by the fifth cervical root. Here has been suggested and carried out a few times an anastomosis of the fifth root into the sixth. In Erb's brachial birth paralysis some fair results have followed this operation, and there is no reason why good results should not obtain also in ant. poliomyelitis. Harris reports one case in which he grafted the fifth into the sixth root for deltoid paralysis and reported a fair recovery. Tubby reports two cases with favorable results. Further work is required before we can estimate the value of this operation.

In this group of paralyses the first object is to get a return to power of the biceps. The arm should be kept flexed at a little less than a right angle, and massage and muscle training be applied to the muscle. Should there be no return of power, the lower portion of the outer part of the triceps may be brought forward and passed through the lower part of the biceps. This in a few cases has proven a fairly successful operation.

A more useful arm will generally follow after Jones' operation. In this a diamond shaped incision is made with apex above, involving the lower third of the arm, and another with apex below from upper third of the forearm. The skin and sub-cutaneous tissue are dissected off and the upper angle is stitched to the lower. The hand is supported in a sling for several weeks.

For paralysis of deltoid, supra and infra spinatus, arthrodesis, that is, denuding the cartilage from the articular surfaces, is a satisfactory operation. An incision is made downwards from coracoid process, the groove between deltoid and pectoralis major defined, and the muscles separated. The capsule is incised and the head of the humerus drawn out of the wound and the cartilage removed therefrom, as also from the glenoid surface of the scapula. The head may be pegged or screwed to the glenoid, though this is not necessary. The arm is somewhat internally rotated and abducted. The wound is closed without drainage and the arm put up in plaster for a couple of months.

No other muscle or groups of muscles can satisfactorily replace the deltoid when paralyzed, though some improvement may be looked for when transplantation of muscle is performed. The clavicular part of pectoralis major is freed from the clavicle and brought up over the acromion, where it is fixed to the periosteum. The lower portion is carried downwards and firmly fixed into the wasted deltoid. Tubby has modified this: he frees, in addition, the clavicular part of the trapezius, and this end of the trapezius is united to the upper end of the clavicular part of the pectoralis major, the lower end of this muscle being inserted into the humerus as far down as possible, so as to replace the atrophied deltoid.

Again, the trapezius may be used alone. It is freed from the clavicle and acromion and is inserted into the upper part of the deltoid.

Paralysis of the muscles about the ankle joint. This may be complete or partial. When complete the ankle becomes a flail joint, and to remedy this arthrodesis is performed. The transverse incision is doubtless the most convenient, but the dorsalis pedis artery must be cut and tied. The longitudinal incision between the extensor longus digitorum and extensor longus hallucis prevents that and is on that account preferable. Besides denuding the lower end of the tibia and fibula, and upper surface of the astragalus, the astragalo-scaphoid joint, must also be done to prevent dropping of the inner side of the foot.

One may also here perform Whitman's operation. He advises his operation because the weight must be borne upon an astragalus perched upon an unstable os calcis. He therefore urges the removal of the astragalus. This is done through a curved incision proceeding from below and behind the external malleolus to the head of the astragalus in front. The two peronei are freed and the astragalus removed after the interosseous ligament has been divided. The cartilage is removed from the surface of the adjacent bones, the wound is closed and the foot is displaced backwards, so that the internal malleolus is brought into contact with the scaphoid. A plaster bandage is applied to the foot in an attitude of slight plantar flexion.

Paralysis of calf muscles, producing talipes calcaneus. For improvement this offers the poorest prognosis of the paralyzes about the ankle joint. The deformity can be prevented by extending heel of shoe backwards or by a side iron from below the knee with a catch at ankle-joint. Shortening of tendo achilles alone does not give any permanent result. The peroneus longus may be transplanted into tendo achilles on outside and part of

flexor longus hallucis on its inner side, at the same time shortening the tendo achilles. As the foot afterwards tends to assume the valgus position, Jones advises a wedge-shaped piece with base upwards, to be removed from outside of the astragalus.

Paralysis of the extensors—talipes equinus. Here one must get the foot in the right-angled position, and if it has not been properly treated tenotomy of tendo achilles is necessary. If the patient can extend the toes upon plantar flexion, we can give a cheerful prognosis. Side irons below the knee, with a catch to prevent dropping of the foot, are worn by day and a right-angled tin night shoe by night. Removal of an oval piece of skin from front of ankle joint, according to Jones' method, is often of benefit. Partial stiffening of the joint is obtained also by means of the insertion of silk strands quilted into the periosteum from the lower end surface of the tibia down to the scaphoid. This will prevent the milder forms of equinus, but is somewhat difficult to perform.

Paralysis of tibialis anticus and posticus. Talipes valgus deformity is prevented by continuing the heel forward upon the inner side to ball of foot and by using outside iron with valgus T strap. Valgus T strap is one which cures valgus, putting the foot towards the varus position.

The following tendon transplantations can be performed:

1. Peroneus tertius into tibialis anticus above the ankle joint.
2. Outer part of the tendon of extensor communis digitorum and tendon of peroneus tertius into inner border of foot.
3. Peroneus longus into tibialis posticus.
4. Inner head of tendo achilles and gastrocnemius into tibialis posticus.

An oval flap of skin may be removed from inner side of ankle according to Jones' method.

Paralysis of peronei—talipes varus. Deformity is prevented by continuing outer part of heel forward to ball of foot. More severe cases one uses an inside iron with varus T strap. An oval flap of skin may be taken from outer part of foot.

Tibialis anticus may be inserted into cuboid. This is a very satisfactory operation.

Outer part of tendo achilles and gastrocnemius united with the peroneus longus.

These different paralyses are often in combination, as calcaneo valgus or varus and equino valgus or varus, and are treated on similar lines to the above.

Paralysis of quadriceps extensor. Here a walking instrument to upper part of thigh, with catch at the knee, enables the

patient to get along fairly well. If paralysis is only slight the patient will, in time, be able to discard the instrument. Transplantation can here be done with good result. If the sartorius is not affected—and it generally escapes—it may be transplanted into the upper part of the patella. Should the sartorius be defective, a portion of the biceps from outside and part of semi-membranosis from inner side can be inserted into the upper part of the patella.

In poor people who cannot afford the expense of instruments and those who prefer not to wear instruments, arthrodesis of the knee joint may be performed. This is done through a curved incision passing below the lower end of the patella. The leg is kept in plaster for six months, but patient must be kept in observation for a much longer period owing to the liability of the knee to become flexed. For this reason, as a preliminary operation, Openshaw advises tenotomy of the hamstrings.

Russell Hibbs has given us a new method for stiffening the knee joint. He mortises the patella after it is denuded of its periosteum and cartilage into a space prepared for it by the removal of the cartilage just anterior to the centre of tibia and femur. Space can be found sufficient without injury to the crucial ligaments or to the epiphyses of either bone. The limb is put up in plaster for six months and patient is then able to walk without supports. Its advantages are: there is no shortening of the leg and there is less tendency for flexion to occur at the knee, as in ordinary arthrodesis.

Paralysis about the hip joint. Here the flexors are, as a rule, spared, and unless they have been properly treated will become contracted. In mild cases the contraction may be corrected by putting child in double Thomas splint. In severer cases tenotomies will be necessary. The sartorius, the tensor fascia femoris, and the adductors are cut through by the open method. The child is then put in a double Thomas splint. In a couple of week's time walking instruments reaching to the great trochanter and provided with a pelvic band, should be worn.

In cases with dislocation of the hip joint, owing to the difficulty in maintaining the reduction, arthrodesis should be performed.

A CASE OF SPINDLE-CELL SARCOMA OF THE LARYNX*

BY J. PRICE-BROWN, M.D.

On February 17th, 1911, Mr. E. O., aged 23 years, lithographer, tall, anæmic and thin, was referred to me by Dr. A. D. Watson, of Toronto. He had been suffering from sore throat, low down on left side, with gradually increasing stenosis, for two months. He claims that previous to the time mentioned he was quite well. The only medicine he had taken was a tonic. There had been no direct treatment of the throat. Swallowing was very difficult and painful. Fluids went down easier than solids. Night cough; slept poorly; pains in throat at night and day, particularly in left side; no report of fever, but sense of chilliness at night time; respiration difficult, but better through nose than mouth; bowels regular. At 9 p.m. pulse 94, resp. 17, temp. 99.3-5. Worked up to previous day.

Examination.—Nose, nasopharynx and oro-pharynx all normal. A very large tumor filled the larynx. It was dark red and corrugated on left side, a little bluer and smooth at right border line. It somewhat resembled a huge dark colored strawberry, particularly on left side, with very wide sessile base. It was immovably fixed by wide attachment to left arytenoid and left ventricle region. It so filled the larynx that only a narrow slit between it and the epiglottis was visible on the right side; while on the left it completely overlapped the larynx, hiding part of the epiglottis and the whole of both arytenoids and commissure. The basic attachment appeared to be as wide as the surface on the left side, projecting over into the œsophageal region; yet it was evidently situated above the vocal cords, as the man retained a strong, guttural, muffled voice. Externally the adjacent glands on the left side were enlarged and tender on pressure.

Owing to the roundness, smoothness and color of the right edge of the tumor, my first impression was that it might be a cystic angioma—although possibly an angio-sarcoma.

The question was how to deal with it. If nothing were done, and the tumor continued to grow, as it had done during the past few weeks, suffocation would very quickly ensue. It did not look like an operable case, that is, by direct excision, owing to with which it was growing.

*Read at the annual meeting of the American Laryngological Association, Philadelphia, May 29, 1911.

Diagnosis, too, should be made quickly. For this to be accurate, a large segment of the most solid part of the tumor would be required. The whole upper surface of the tumor seemed to be too flat and widely attached to allow a suitable piece to be at once removed by snare. I also feared, if my idea of angioma were correct, that an attempt at snaring might produce dangerous hæmorrhage.

I therefore made, under cocaine and adrenalin, a preliminary incision with the electro-cautery knife, into what seemed to be the most solid part of the tumor. The bleeding was very profuse; but the tissue was hard and resisting, and my idea of angioma collapsed. I then concluded to cauterize the growth as much as I could at each sitting without producing dangerous bleeding, and as soon as possible isolate a large segment of the solid tumor, and then remove it by snare for microscopical examination. The operations were repeated daily at my office; but each time I noticed that other parts of the neoplasm, not touched by the cautery, were growing very rapidly, and it was not until the fifth day that I secured the desired segment. This was a piece of solid tissue as large as a medium-sized marble. It was put in a solution of formalin and sent to Dr. Archibald, the pathologist, to examine. He pronounced it as a positive case of spindle-cell sarcoma.

As the patient bore the operations cheerfully and the growth of the tumor continued to be very rapid, I decided to use the cautery morning and evening, if the patient could stand it, in order to beat the growth in the race, taking care never to touch normal tissue with the white-hot cautery blade. The patient was ordered not on any account to attempt to swallow solids of any kind until instructed to do so, but to drink very freely of milk.

From day to day, before using the cautery again, the sloughs produced by the previous burning were removed by either forceps or snare, and here they are. These were taken away during the first three weeks of treatment. They do not include the large segment sent to the pathologist. By this time the bulk of the growth had been removed and a bit of the right cord could be seen. The tumor was not more than a fourth of its original size, and I considered that it would be a good time now to try the effect of radium.

For this I consulted Dr. Ryerson, who had secured a good supply of the metal from Germany. He kindly rendered his assistance. The amount he used was 22 milligrammes; 12 milligrammes were attached to a laryngeal applicator and placed within the larynx upon the growth, and held there by the patient

for from twelve to twenty minutes without removal. At the same time ten milligrammes were strapped to the neck over the enlarged glands and retained in position for an hour. This continued treatment was repeated on alternate days for more than a week, the electro-cautery operations for the time being suspended.

During this period there was less pain. The increase in growth, however, was enormous. The larynx was filled again, but the color was lighter, and the new part of the tumor more polypoid in shape. Externally the glands had enlarged. It is possible that the radium was modifying the character of the growth, but the position was too vital to allow the treatment to be continued.

At this time I exhibited the patient to the section of ophthalmology and oto-laryngology of the Toronto Academy of Medicine, and asked the opinion of the Fellows upon the wisdom of attempting a radical operation. It was not advocated by any one, and an ex-chairman stated that he would not consider it a case for operation in that way.

About this time the patient had some severe nocturnal suffocative attacks, the family physician being summoned under the belief that he was dying.

As he survived until morning, he was again brought to my office, and I resumed the daily cauterizations, and I continued them almost without interruption until the next meeting of the Academy, when I again exhibited the patient.

During this period, that is, from the time of the cessation of the use of radium up to that date, this bottle of fragments had been removed. The right vocal cord could be readily seen for its entire length, and the tumor was smaller than ever. The enlargement of the glands, too, at the side of the neck had almost disappeared. The Fellows of the Section commented on the improved condition.

At this time the patient was exceedingly thin, and while over six feet in height weighed only 124 pounds. He was still on the milk diet. From then until now the burnings have been repeated on alternate days, the hæmorrhage gradually becoming less. As the sloughs were smaller, they were not saved. The left ventricular band, being embodied in the growth, has disappeared, but the left vocal cord, although thickened, can now be seen from end to end. It retains with its fellow the full power of abduction and adduction.

The operative treatment now is to keep under control the vegetations as they arise, with the hope of ultimately getting rid

of the entire base. At the present time the larynx is clear and open. The man is in good voice. The glandular enlargement and the soreness of the neck are gone. Over a month ago the restriction to milk diet was removed, giving him the option of any food he liked, on condition that he masticated it well and ate slowly, but advising eggs and pudding-diet for a while. Now he goes to the table with the rest of the family and takes a square meal. Since last showing him to the Academy his weight has increased from 124 to 140 pounds.

Remarks.—One great disadvantage in treating this case has been the length of the patient's neck and the great distance down to the vocal cords. But there has been a corresponding advantage which has more than made up for the depth of the larynx; that is, the form and position of the epiglottis. It is the arc of a large wide circle, the lip leaning all the way round forward toward the base of the tongue. Another advantage I have had is the bright, cheery, optimistic tone of the patient. He always came in and went away with a bright smile. And although up to the present time I have cauterized the larynx at fifty-one sittings, and never, since the piece was snared off for pathological examination, with less than five cuts, with the cautery knife, yet his entire confidence has been retained throughout.

Another point I think is worthy of note: Throughout this prolonged cautery treatment there has never been any injury done to the laryngo-œsophageal wall. At no time, whether in taking fluid or solid nourishment, has there been any complaint of particles or drops falling into the wrong passage. The larynx has retained its normal contour, and there is no appearance anywhere of cicatricial contraction producing deformity arising from the operations.

(Note.—On June 15th, after being unable to work for four months, the patient was well enough to return to his regular occupation as lithographer, and now, after five months steady employment, is still able to continue his work. The sarcoma, however, has not ceased to develop, and still requires cauterization twice a week to keep the growth under control. The ultimate result is doubtful, particularly as the external gland has become enlarged again.—P.B., Nov. 20th.)

Selected Articles.

THE TREATMENT OF ULCERATIVE COLITIS

BY D'ARCY POWER, F.R.C.S. (ENG.).

If we could see people in the earliest stages when the diarrhœa is beginning and its true nature is shown by the patches of local tenderness in the course of the large intestine, it is possible that rest in bed, a thorough course of castor oil, combined with injections of olive oil, dilute nitrate of silver, or warm saline solution might stop the ulceration. But as the disease begins so unostentatiously, the patient has allowed it to go on until more active measures are required. At this stage it is necessary to secure the services of a trained nurse, either at home or in a nursing home. The patient must be sent to bed, and his bowels must be systematically unloaded, for, in spite of the fact that he has had diarrhœa, it will nearly always be found that the bowels contain a large amount of decomposing material. Castor oil in a dose of six drachms, given in as palatable a form as possible, proves the most efficient and least irritating aperient, whilst the lower bowel is washed out with normal saline solution at a temperature of 105°—110° F., given slowly through a rectal tube to the amount of two pints. Soap and water enemata yield less satisfactory results in these cases, because they are more irritating, and are more apt to produce an enema rash. The patient's appetite remains good, and some care, therefore, will be necessary in dieting him. It is desirable on the one hand that there should be as little solid residue as possible, whilst on the other the medical man should remember that he is treating a long and very exhausting disease from which the main hope of recovery lies in the ability of the patient to eat and digest as much as possible. The diet, therefore, should be mainly proteid, but it need not be so exclusive as to lead to the deprivation of the more easily digested starchy foods. The functions of the stomach and small intestine are normal; it is the large intestine alone which is out of gear. Eggs, roast and boiled meat, chicken, and bread may be given. Milk often makes the patients worse, perhaps because too much is given and it curdles. It may be peptonized or diluted with lime water or soda-water. Benger's Food and Sanatogen are often useful. Sugar may be given, but fruits,

whether raw or cooked, and green vegetables should be forbidden, except, perhaps, as orange or lemon juice carefully strained. A moderate quantity of the usual stimulant should be allowed to adults who are accustomed to take alcohol.

The irrigations must be given slowly and carefully. One or two a day are enough, but it should be remembered that they exhaust the patient, and some discretion must be employed, since there is a tendency for too many to be given rather than too few. It should also be remembered to tell the nurse that nitrate of silver irrigations must be made up with distilled water, and not with tap water or with salt solution. A nitrate of silver solution, if it is to be of any use, must be absolutely clear and without the slightest trace of any milkiness.

The ulceration is so chronic that a variety of irrigations will have to be employed, and what is useful for one patient will be found useless for another. Carbolic acid in all its forms, and even in very dilute solutions, is not satisfactory, as the phenol is absorbed by the bowel and carboloria results. Salicylate of bismuth, grs. xv. ad Oi, carbonate of bismuth, grs. xv. ad Oj; perchloride of mercury 1: 20,000; biniodide of mercury 1: 20,000; permanganate of potassium 3j ad Oi, zinc sulphate 3j ad Oi; olive oil; nitrate of silver grs. $\frac{1}{2}$ —i. ad Oi; and warm salt solution 3j ad Oi, are all useful and should be tried from time to time as circumstances may seem to require. Some will be found too irritating, others productive of no good results; but it is impossible to say beforehand which will prove the more satisfactory. The injections must be given as high up in the bowel as possible, and by means of the long tube, which should be well greased with Unguentum Cocainæ, or more simply with equal parts of castor and almond oils to which a 2 per cent. solution of cocaine has been added. The tube must be passed with the greatest care, for the parts are relaxed and tender and if any roughness is employed the piles will become inflamed, prolapse of the rectum occurs, and a fissure or abscess may be the result. Two or three pints is generally sufficient, but the maximum quantity should be given in order that the whole colon may be distended.

I have already drawn your attention to the fact that the prognosis depends to a large extent upon the ability of the patient to eat and digest his food. It is inadvisable, therefore, to give much medicine by the mouth in these cases. Try to think of the condition as being a local inflammation of the large intestine, and you will remember this fact. When there is much abdominal pain chlorodyne in doses of 5 to 15 minims will be found useful, or a mixture containing 15 grains of aspirin and 20 of chloral

hydrate is often effective. As our predecessors used to bleed every case which they believed to be of inflammatory origin, so we are in some danger of following similar lines and treating every case with a vaccine where we have reason to suppose that the inflammation is associated with the presence of a micro-organism. Neither in bleeding nor in vaccino-therapy are there any certain guides as to when the measure will do good, when it will be harmful, and when it will neither help nor hurt. Vaccino-therapy is well worth trying in cases of ulcerative colitis, for the results are sometimes encouraging, and perhaps with a wider knowledge rules will be formulated for its successful practice in these cases. The disadvantages attending its employment are that the reaction makes the patient feel very ill, although he reaps the benefit afterwards, and that, as in the second case which I used as my text, an abscess may form at the seat of injection in patients who have lost much of their resisting power to microbial infection.

At present I am inclined to reserve operative measures in cases of ulcerative colitis for the worst cases where the temperature is high and oscillating, the pain is great, the appetite is beginning to fail, and the sleep is broken. Appendicostomy then seems to be a satisfactory operation. It does not cure the patient of the chronic ulceration. This should be made clear to the friends of the patient before it is undertaken. It enables the large intestine to be thoroughly flushed in a manner which cannot be done as effectually by irrigation from the anus, and with far less disturbance of the patient and consequently with less exhaustion. It does not take many minutes to perform, and the patients bear the anæsthetic and the necessary manipulation remarkably well even when they appear to be in a most critical state. The operation is performed like the ordinary appendicostomy through a gridiron incision over McBurney's point. The appendix is brought out of the wound and its base is sutured to the peritoneum to prevent it from slipping back. The wound is then closed so that the distal third of the appendix is left outside the line of incision and the wound is sealed with a collodion dressing. The apex of the appendix is then cut across transversely until the lumen is exposed, the cut being made on the side opposite to the meso-appendix. A No. 6 or No. 7 soft rubber catheter is inserted into the appendix, and is pushed on for five or six inches. The bowel may be irrigated at once with two or three pints of warm salt solution or the irrigation may be deferred until the patient has recovered from the anæsthetic.

The immediate result of the operation has always been good

in my own experience, and is far better than was the result obtained by making an artificial anus. The temperature falls, the pain is diminished, and the appetite returns. The diarrhoea, too, can be kept in check and the discharge from the bowel becomes much less offensive. In a few cases this improvement has been permanent, but in most of the cases it has been followed after a longer or a shorter period by a relapse, never to the extent for which the operation was performed, but still sufficient to disappoint the friends unless they have been forewarned of its possibility. But in spite of this the operation of appendicostomy is a good one, and should be done in selected cases. When it was not done my patients died and I got so disheartened that I felt disinclined to treat cases of ulcerative colitis, saying that if I operated I should merely hasten their end. I have had no death since appendicostomy has come into use, and I have here the notes of twelve cases in succession. The only unsatisfactory sequelæ I have seen after appendicostomy operations is that the line of incision may become infected from the appendix and suppuration may take place for a few days. But this suppuration has never extended to a peritonitis, and a few days' fomentation followed by a dressing of red lotion has been sufficient to cure it. The infection seems to be associated with the general lowered vitality of the patient. Sanitas fomentations—an ounce to the pint—are better than those of boric acid. It is not necessary to keep the catheter in the appendix after the first few days, since it can easily be passed when the bowel is to be irrigated. Neither is it necessary to employ a nurse when the wound is once soundly healed. The patient can easily be taught to pass the catheter and irrigate the colon for himself, although there are always a certain number who prefer to have the operation done for them. The appendicostomy should be allowed to remain open for a longer time than seems absolutely necessary, for if it is closed too soon the symptoms may return. The opening is only a minute depression easily covered with pieces of dry gauze kept in place by strapping. There is no faecal discharge from it, so that it is not a source of serious trouble even to the most fastidious. Indeed, the tendency is rather for the sinus to close spontaneously, unless a catheter be passed, than for it to remain open.

Other operations are advised for the treatment of ulcerative colitis, but I am glad to say that as yet I have not had any case which needed them, but cæcostomy and ileo-sigmoidostomy have both been recommended and practised. Prof. von Sonnenburg, of Berlin, has recently shown us some excellent skiagrams of patients whose intestine has been short-circuited for chronic colitis.—*The Medical Press and Circular*.

SOME MODERN CLINICAL ASPECTS OF THE HEART AND CIRCULATION

Even the practitioner who only cursorily turns over the pages of his medical journal, and glances with a hurried view at the substance of the various articles, must be aware that the subject of cardiac disease has lately received considerable attention, and has undergone a rigidly scientific revision. Perhaps the practical outcome of these new cardiac studies may not be very convincing to him, and the therapeutic application of the more advanced knowledge may not stand out in the necessary relief. It should therefore be a profitable undertaking to endeavor to describe how clinical medicine has gained from the recent exhaustive researches on the heart, and how the treatment of cardiac disease has reaped decisive benefits therefrom.

The more modern investigations deal less with the valves and more with the heart muscle. Heart murmurs have been shorn of their terrors to a considerable extent, and more stress is laid on the integrity of the heart rhythm. One serious condition of disturbed heart rhythm has been very closely studied and clearly elucidated. The main clinical features of this condition consist of marked slowness of the pulse, either habitual or temporary, with severe attacks of cardiac discomfort culminating in syncope, vertigo, or seizures resembling in character epilepsy or apoplexy. Visible pulsation of the jugular veins in the neck is a cardinal and essential feature of these attacks, together with extreme slowness of the radial pulse. The symptoms, which are usually very alarming, are obviously due to temporary interference with the cerebral circulation, and, of course, a fatal issue to the attacks frequently occurs.

This symptom-complex constitutes the Stokes-Adams disease, and one of the main achievements of modern cardiac research has been to establish the pathology of this disease. It was formerly thought that this disease arose in the medulla oblongata and that it was due to atheromatous degeneration of the arteries therein, which led to disturbed innervation of the heart. It is now known that Stokes-Adams disease is a manifestation of disturbed function within the cardiac muscle.

The first step towards the understanding of this morbid condition of the heart muscle is to realize that the cardiac beat is independent of any nervous ganglia within the heart, but originates within the muscle itself. The auricular systole starts the wave of contraction and propels it into the ventricle. The auri-

cular and ventricular beats are not independent actions, but they represent the specialized contraction of muscle fibres in anatomical connection. Although we are accustomed to regard auricle and ventricle as separate chambers, it is important to remember that it has now been conclusively proved that they are bound together by distinct strands of muscle tissue, known as the "Auriculo-ventricular bundle of His." It runs along the right side of the septum between the two auricles, and the fibres are gathered up into a knot just below the insertion of the middle cusp of the tricuspid valve. Thence they spread into the ventricular septum in the form of two bands enclosed in separate fibrous sheaths. Finally, the fibres disperse, some entering the papillary muscles, others passing beyond into the cardiac walls intertwining with the fibres of the heart muscle proper. The wave of cardiac contraction starting at the auricular sinus travels along this muscular bundle, and disease affecting the muscular fibres of this bundle produces serious irregularity in the heart rhythm. It should be stated that, morphologically, these fibres represent the primitive invaginated portion of the cerebral body tube, from which the mammalian heart is developed. Thus it is easy to appreciate why the rhythmical contractility of the heart should be so dependent upon these fibres.

When the conductivity of these fibres is interfered with by disease, not all the contractions of the auricle are transmitted to the ventricle, and the circulation is consequently harassed with the production of the symptoms previously mentioned as constituting Stokes-Adams disease. *Post-mortem* examinations have shown that this auriculo-ventricular bundle may be involved in a gumma or other new growth, or be necrosed, fibrous or infiltrated with fat. Clinically these cases manifested cardiac and cerebral symptoms of diverse kinds, but they were all alike in exhibiting a very slow pulse, accompanied by vigorous jugular pulsation, during the attacks. When these patients are submitted to the skiagraphic screen, it can be seen that the auricular contractions are regular, but that only few of them reach the ventricles.

Normally, as we have said, the wave of contraction begins in the auricle. But when the auricle becomes overstretched, as in cases of severe mitral stenosis, the conducting fibres therein lose their power of transmitting the impulse, and the auricular contraction itself is less effective. According to Mackenzie, the impulse will, in this circumstance, start at the auriculo-ventricular knot, which, as previously stated, is situated below the insertion of the middle cusp of the tricuspid valve. Thence the wave

spreads both to the auricle and the ventricle, and these two chambers contract simultaneously. The end of the ventricular diastole is not occupied by the auricular systole, and therefore there is no presystolic murmur. This explains the disappearance of this characteristic murmur in advanced cases of mitral stenosis when the auricle is failing. In this disability of the auricle the blood which has collected therein during the ventricular systole pours through the stenosed orifice as soon as the ventricle relaxes in diastole. In coming through the narrow opening a sound is produced which constitutes the mid-diastolic murmur. The normal cardiac rhythm is always disturbed when this murmur is present.

It is a well-known clinical fact that in arterio-sclerosis cardiac irregularity is very prone to occur. This irregularity is due to the sclerotic condition of the coronary arteries, one branch of which supplies the "auriculo-ventricular bundle," leading to its degeneration. But it would appear that the degeneration of the "knot," already referred to, shows itself by hyper-excitability. It follows therefore that, in these cases also, the wave of contraction starts therein, spreading simultaneously to auricle and ventricle and disturbing the harmony of cardiac rhythm.

A very familiar way in which rhythm is disturbed is by the interposition of a number of additional beats—extra systoles, as they are technically called. Patients who suffer from this irregularity complain of flutterings, or sensations of stoppage of the heart, or thudding action of the heart. Some of these cases are functional, but in others there is, certainly, some disease of the auriculo-ventricular bundle, not enough to cause heart-block, but enough to provoke stimuli to disorderly contraction. Each case requires to be judged on its merits as to prognosis, the main points of gravity being onset of fatigue after slight exertion and the presence of high blood-pressure.

The subject of high blood-pressure has assumed considerable practical importance as a consequence of modern cardiac research. Sphygmomanometers promise to become as familiar in use as thermometers. It must, however, be confessed that a good deal of vagueness exists about the significance of the measurement of blood-pressure. When the index of the instrument points to the presence of high tension, the observer often imagines that the whole mystery of the disease lies revealed before him. But the truth is, that high tension as indicated by the sphygmomanometer is not more of a diagnosis than is pyrexia when indicated by the thermometer. The cause of a high blood-pressure needs as much search as the cause of fever. When the

raised tension is associated with thickened vessels, one is apt to jump to the conclusion that the arterio-sclerosis has caused the high pressure, whereas, in point of fact, the anatomical changes in the arteries are the consequences of the raised tension. It is agreed on all sides that the presence in the blood of certain toxins, resulting from proteid decomposition, raises the pressure of the blood. The relation between toxins and blood-pressure has been most clearly demonstrated in connection with the toxæmias of pregnancy. In ordinary pregnancy the pressure is normal, but in the albuminuria of pregnancy and in eclampsia the rise in blood-pressure is considerable.

Sometimes a high blood-pressure is a necessary compensatory arrangement. This applies to cases wherein the arteries of the kidneys or of the brain become narrowed and thickened and the maintenance of circulation through them is difficult. The blood-pressure then rises to cope with the increased resistance, though as a rule high blood-pressure is an antecedent of arterial disease. It has been shown experimentally that the repeated injection of adrenalin into the circulation of rabbits uniformly produces an increase in blood tension, and subsequently arterio-sclerosis develops.

A sphygmomanometer is generally used when a high blood-pressure is suspected; it is rarely employed when one is sure that the pressure is low. This omission is, however, a serious one, because the measurement of blood-pressure in acute disease affords the most reliable warning of a failing heart. This is especially true of pneumonia, where the whole success or failure of treatment turns upon the integrity of the heart. Ordinary clinical observation only begins to see danger when the heart is actually failing. The systematic estimation of the blood-pressure in this disease would anticipate this danger, because the first indication of a low pressure should demand immediate resort to stimulating measures. Roughly speaking, the blood-pressure in pneumonia should not fall, in terms of millimetres of mercury, below the pulse-rate. If it does, steps must at once be taken to raise it.

It is worth while emphasizing the ravages which a high blood-pressure is capable of producing within the heart and arteries in order to insist that pure mechanical strain can cause widespread pathological changes. We are too apt nowadays to attribute all extensive disease to bacterial infection. Indeed, Professor Adami holds that the ordinary rheumatic valvular disease owes much of its production to strain. The rheumatic poison sets up a true inflammation in the valve; it destroys the endothelium and gives

rise to the vegetations which appear on the valves, but the diffuse and generalized thickening of these valves is the consequence of the strain to which they are subjected, either by an actual or a relatively increased blood-pressure.

Although arterio-sclerosis has now become a thoroughly well-recognized clinical condition, it is not always realized that the abdominal blood-vessels may share in this morbid change. Forgetfulness of this fact accounts for much obscurity in the diagnosis of certain cases of abdominal disease, but really the possibility of this condition should be ever present in the mind of the practitioner. The modern view of the pathology of arterio-sclerosis, indeed, suggests that the intestinal vessels are the most likely to be attacked, because the toxins which are ultimately responsible for the disease originate within the intestine. The symptoms which result from arterio-sclerosis of the abdominal vessels are, in the main, imitations of gastro-intestinal disease—functional or organic. There may be hæmatemesis from rupture of arterio-sclerotic vessels in the stomach, or the general aspect may be that which arouses suspicion of malignant disease. Pain after food is generally a marked symptom, and sometimes it is intense enough to make the patient decrease his food to an irreducible minimum. The characteristic symptoms of this disease, however, occur in paroxysmal attacks, and they are stated to be due to spasm of the diseased vessels, comparable to the events which occur in a seizure of angina pectoris or of intermittent claudication. The attack may well be termed “angina abdominis.” The pain is generally referred to the epigastrium, and is described as being of a twisting and griping character. The abdomen is distended, the distress is evidently great, the patient displays great anxiety, and the practitioner usually thinks of intestinal obstruction, or biliary colic, or perforation of the stomach. Some of the cases exhibit chronic intestinal obstruction because the obstructed blood supply to certain segments of the bowel results in the production of atony of those portions.

The diagnosis of abdominal arterio-sclerosis can only be made after a comprehensive consideration of the state of the whole circulation in any given patient. If it is known that a high blood-pressure is present, and palpation over the abdominal aorta reveals marked pulsation, suspicion may be aroused. If, then, auscultation over the aorta elicits a harsh systolic murmur and there is evidence of arterio-sclerosis elsewhere, the suspicion is confirmed. But one must never definitely conclude that abdominal arterio-sclerosis exists merely because certain of the accessible blood-vessels show this change. Nevertheless, *post-*

mortem records prove that the condition is not of rare occurrence, and that the most usual site for abdominal arterio-sclerosis is along the vessels of the lesser curvature of the stomach. The pathology of gastric ulcer seems to indicate a close connection between it and sclerosis of the gastric vessels.

The therapeutics of hypertension primarily involves the matter of prophylaxis, for it is proverbially true here that prevention is better than cure. The rationale of prophylaxis is to influence the metabolism in such a way as to limit the formation of the chemical toxins which result from maldigestion, and also to avoid the flooding of the circulation with fatigue products. This means the diminution of meat food, gravies and soups; the total abstinence from alcohol, tea and coffee, as well as a general moderation in diet all round. Excess of mental or physical strain must be most assiduously shunned, and tobacco must be given up. It is necessary to scrupulously observe ordinary measures of hygiene, such as ensuring adequate sleep, sufficient warmth of body surface, the breathing of fresh air, and regular action of the bowels. When there is reason to fear that a condition of high tension is establishing itself, much can be done to resist this menace by the routine use of potassium iodide, and the occasional but frequent employment of small doses of calomel. For emergency use in the agonizing pain of the paroxysms which occur in abdominal arterio-sclerosis, one of the most effectual and rapidly acting drugs is diuretin (theobromine-sodium salicylate). This drug causes dilatation of the arteries of the splanchnic area, and therefore relieves the arterial spasm which sets up the pain.

In regard to the drugs usually employed in the treatment of heart disease, most interest centres round digitalis, and the last few years have witnessed many attempts to add to the therapeutic security of this drug and its preparations. Digitalis is a notoriously uncertain drug, even when applied in suitable cases, and of late numerous pharmacological efforts have been made to remedy this. Most of these consist of substituting the active principles, digitalin and digitoxin, for the tincture or infusion of the leaf. In practice, however, it was found that these active principles did not supersede the older preparations with any considerable advantage, and although digitalin has obtained a vogue, most clinicians prefer to depend on one of the older forms of digitalis medication. There is again a decided tendency to revert to preparations of the whole leaf, and this has brought the question of standardization prominently to the fore. Abundant experiment has shown that chemical analysis of a specimen of digitalis tincture or infusion is no adequate guide to its thera-

peutic powers. A digitalis preparation must be judged by its physiological activity, and it has therefore become recognized that physiological standardization is a *sine qua non* for them. These preparations undergo rapid deterioration, so that precautions must be taken to ensure that their strength, as ascertained by standardization, is retained for an adequate time. It appears that, from this point of view, infusions of digitalis are very unreliable, but that tinctures made with 70 per cent. alcohol may be depended upon to preserve their strength as ascertained by the standardization tests. Some authorities hold that the powdered leaf, if not more than one year old, is the most stable preparation, but this has the disadvantage of causing gastro-intestinal disturbance, just like the tincture or infusion. Theoretically this gastric irritation may be avoided by dispensing the powdered digitalis in gelatine capsules. In practice this supposed safeguard is often a delusion, because the capsules dissolve in the gastric juice in about ten minutes. The insolubility of these capsules may, however, be guaranteed by hardening them in formalin. Quite lately a new purified extract of digitalis—digipuratum—has been put on the market, and the records of its use point to it as being the most reliable preparation hitherto available for accuracy of dosage, promptness of action, freedom from gastric irritation, and from the risk of cumulative effect.

When a cardiac patient has reached the stage of œdema and ascites, the pressure conditions in the circulation are such that there is little chance of a drug like digitalis being absorbed from the stomach. In these circumstances digipuratum may be injected intravenously or subcutaneously, and convenient sterilized ampoules have been put up for this purpose. These may well replace the intravenous injections of strophanthin, which are usually reserved for the desperate cases of cardiac failure from the effects of back pressure.

Much attention has recently been devoted to digalen, which has been extracted from digitalis leaves by Cloetta. The substance owes its power to the digitoxin of which it is mainly composed, but it is a much more safe form of medication than that of the glucoside. The reports on its use are naturally not all unanimous, but the general verdict given by the literature is that it is better tolerated than the infusion of digitalis, while its therapeutic effect is more powerful. It can be injected intravenously, and the results of such procedure are both striking and rapid, the principal actions being that of suddenly raising the blood-pressure and causing free diuresis. Cases of severe cardiac embarrassment, with dyspnœa and œdema, afford the best indi-

cations for this drug, if the blood-pressure is low. No preparation of digitalis should ever be given when the blood-pressure is high, because the action of digitalis is to raise it still further, and to increase the peripheral resistance against which the heart has to cope. It has been well said that it is as rash to give digitalis without taking the blood-pressure as to give morphia without examining the urine. This difficulty can be overcome by prescribing strophanthin, which does not constrict the vessels like digitalis, or by combining the latter with a vaso-dilator like nitroglycerine. Although digitalis increases the force of the cardiac contractions, it tends to inhibit the wave of contraction as it travels from auricle to ventricle. It is therefore contraindicated in those cases of heart-block to which previous reference has been made. Caffeine or strychnine are excellent drugs to employ in this condition, when the pressure is low; theobromine when it is high.

The vagaries of blood-pressure offer practical explanations of many clinical manifestations which are otherwise obscure. For instance, it is well known that a large cerebral hæmorrhage is liable to be followed by sundry small ones. Obviously this is because the original hæmorrhage—itsself the result of a high blood-pressure—tends to raise the intracranial tension, which in its turn causes an increase in general blood-pressure and further strain on diseased cerebral vessels, with consequent hæmorrhage.

Closely connected with the general question of blood-pressure is the phenomenon of shock. The pathology of this condition has also undergone some revision of late. Shock is seen in its typical form after severe operations or other trauma, or as a result of grave septicæmia. Its cause is neither cardiac nor cerebral, but it is due to exhaustion of the vasomotor centre in the medulla. The immediate consequence of this is that the arteries lose their contractile power, and the circulation cannot be carried on. The blood stagnates mainly in the viscera, and the heart ceases to beat, because little or no blood is brought to it to propel. Crile showed how useless it was to stimulate a heart in these circumstances; the heart only stopped because its chambers were empty. The urgent need was to get the blood to move on from the splanchnic vessels into the general circulation. This could only be done by raising the blood-pressure, and adrenalin has been found to be the most effective agent for this purpose, but it must be given persistently and by intravenous injection. The bandaging of the extremities is a decided aid in this endeavor. The infusion of saline into a vein in order to combat shock is only useful after hæmorrhage, or when the shock is due

to the toxins of severe septicæmia. It is stated that fresh air helps to increase blood-pressure, and the desperate cases of toxic disease ought to be given the chance which this suggestion offers. The success of the open-air treatment of pneumonia is explicable on this basis. As far as drugs go, however, adrenalin is seriously threatened by pituitary extract, as more powerful in raising blood-pressure when it has sunk to its lowest ebb.—*Folia Therapeutica*.

Progress of Medical Science.

MEDICINE.

IN CHARGE OF W. H. B. AIKINS, F. A. CLARKSON, BREFNEY
O'REILLY AND F. C. HARRISON.

Wassermann Reaction Not a Guide for Treatment of Syphilis

In order to ascertain the diagnostic reliability of the Wassermann reaction, Plehn has had the serum of 200 patients at the Urban General Hospital repeatedly examined with the five various technics for the complement-deviation test. The vials with the serum were only numbered, and the serologist knew nothing of the patients yielding the serum, not even whether they had a history of syphilis or not or had taken treatment. The results confirm the possibility that syphilis may become permanently cured with no or very slight treatment. Among the forty-two giving a positive Wassermann reaction repeatedly, nine had reached an advanced age without ever having had any manifestations of their syphilis after the very first, which was also the case in fourteen others who had received what would be regarded as very inadequate treatment; some in this group gave a positive, others a negative reaction. Neisser has stated this year that the spontaneous recovery of syphilis is an extremely rare occurrence, but Naunyn has asserted that it generally dies out of itself in most cases, even without treatment—although he is the last one to rely on this—and the experiences related here by Plehn demonstrate that a clinical cure with little if any treatment occurs oftener than is generally recognized. This fact explains the positive reactions obtained in so many persons who are supposed to be entirely free from a history of syphilis. On the other hand, the Wassermann reaction may become negative while florid manifestations of syphilis persist or develop afterward. The fact that the reaction has become negative does not therefore signify that the patient is actually cured; neither is it always possible, even with the most energetic treatment, to transform a positive into a negative reaction or prevent tardy syphilis of the nervous system, especially the parasyphilitic affections with and without a positive reaction. Plehn adds that the Wassermann reaction gives no information as to the infectious-

ness of the case. The reaction may persist positive for decades while the patient is free from the slightest clinical symptom; thus a positive reaction is no proof of the syphilitic nature of clinical manifestations developing during this period, which may or may not be of a syphilitic nature. On the other hand, a negative reaction is no proof that they are not syphilitic. Plehn reiterates that the Wassermann reaction is only one symptom of syphilis, and, like other symptoms, it may be present or not, and it may be encountered in conditions other than syphilis, as with neoplasms and lead colic. Plehn also has had occasion to deplore the depression produced by knowledge of a positive reaction in persons clinically normal. One young man recently committed suicide on this account, and necropsy failed to disclose the slightest trace of syphilis. A syphilitic with a negative reaction may yet speedily die of brain syphilis, while others with positive reactions may live to be 77 and over without symptoms. He does not dispute the value of the test in certain dubious conditions, but regards the interpretation of the test as a matter involving great responsibility.—*Berlin Med. Wochen. and J. A. M. A.*

Varieties and Treatment of Asthma

In the section of medicine, at the British Medical Association last July, Dr. G. A. Gibson, of Edinburgh, called attention to the fascination of the study of asthma, because so little was known of it. Stewart surmised some years ago that the absence of cilia in the smallest tubes was a sufficient reason why capillary bronchitis was so much more severe than bronchitis of other forms. The theories of the causation of the characteristic paroxysm are many—spasm of the bronchial tubes, contraction of the circular fibres, spasm of the diaphragm, or of the inspiratory muscles, a vasomotor neurosis, and, lastly, an acute catarrh of the mucous membrane. In discussing the varieties of asthma, he read a letter from Allbutt, protesting against the slipshod use of the name, in place of cardiac or renal dyspnoea.

True neurotic asthma may be induced by a large series of causes. When the periodicity is rhythmical, the theory of anaphylaxis may aid us in an explanation. Emotional and reflex causes account for a good many attacks. Yet reflexes from the nose are not responsible for all cases. The digestive and the urinary tract form a basis for certain patients.

Three counterfeits must be distinguished: the dyspnoea of (a) diabetes, (b) uræmia, (c) cyanosis.

How does over-distension take place? Brodie and Dixon have shown that not only is expiration unduly prolonged, but inspiration is forced, occurring before the respiratory phase has come to an end.

It is commonly said that the blood pressure is high in this condition. Gibson's cases showed that in only one did it reach even a moderate degree.

The treatment by dietetic regulations aims at preventing any distension of the hollow viscera. Among the group of intestinal antiseptics he makes use of calomel, gr. 1-12, and acetozone, gr. $\frac{1}{2}$, three times a day. The iodides are most efficacious in preventing the attack; sometimes the action is increased by the addition of arsenic. Lobelia has a powerful influence over the paroxysm. Grindelia is less potent. All the nitrites are warmly commended, while the various powders owe their undoubted effects to the CO_2 , the natural stimulus to the respiratory centre.

Treatment of Diabetic Acetonaemia

Lepine, in the *Progrès méd.*, alludes to the difficulty of dealing with the carbohydrate supply in diabetes. If the carbohydrates are too restricted it has been found that there is a risk of aggravating the acetonaemia, whilst if they are given too freely the diabetic condition becomes worse, and the glycolytic insufficiency increased. In each case daily analyses should be made to show how the acetonaemia and glycosuria stand respectively. Sodium bicarbonate may be given in large doses to saturate the diacetic acid and oxybutyric acid in the blood, and to facilitate the elimination of the latter as a sodium salt. If acetonaemia was simply an acidosis it would have been easy to deal with it in this way. But it is a special intoxication, and Desgrey having shown that the addition of alcohol to propionic and butyric acids diminishes their toxicity, the fact has been made use of with some favorable results in the treatment of acetonaemia. Intravenous injections of alkalis are not on the whole to be recommended. If given at all they are best administered before coma has supervened. The solution the author uses is one of 17 grams of sodium bicarbonate to a litre of water—isotonic. Two litres of this solution may be given, and an hour should be taken in its administration, so as not to overcharge the heart. Copious diuresis follows as a rule.—*British Medical Journal*.

Deaths Following Injection of Arsenobenzol ("Salvarsan") in Diseases of the Heart and Vessels

Great attention has been paid to the action of salvarsan on the heart and circulation, especially since the intravenous method has been generally adopted, owing to the almost constant occurrence of local necrosis after intra-muscular and subcutaneous injections. The results of many thousand injections show that salvarsan, if certain precautions are adopted, has no ill effect on the healthy heart or other organs. The precautions are (1) the dose for intravenous injection should not exceed 0.3 gm.; (2) the injection should be made slowly; (3) plenty of liquid should be used for its solution; and (4) the reaction of the solution must not be acid. An acid solution of salvarsan forms with the blood a flocculent, muddy precipitate and is highly dangerous. Schottmüller (*Deutsche Med. Woch.*, April 6, p. 670) reported a case in which a syphilitic man received an intravenous injection of 0.8 gm. of salvarsan in strongly acid solution, only 100 c.c. of liquid being employed. Slight collapse occurred while the injection was proceeding and death from progressive dyspnoea followed 18 hours later.

Prof. Ehrlich foresaw the possible danger of employing salvarsan in cases of severe heart disease. Several fatal cases have now been reported. Either the disease of the heart was latent or the symptoms were so slight and compensation so good that it was held not to contraindicate the treatment. In addition to the reported cases, Prof. Ehrlich has received numerous notices of fatal results. A great number of these concern patients with cerebral lesions and syphilitic infants, and are not dealt with in this paper. The remainder consists of cases in which cardiac or circulatory disease was found either in vivo or post mortem, often in conjunction with syphilis of the central nervous system. The writer, at Prof. Ehrlich's wish, now shortly summarizes these cases, amounting in all to 18. An analysis of the cases shows that in three the salvarsan treatment did not hasten death, which occurred some time (in two cases on the ninth day and after the fifth week respectively) after the injection from intercurrent diseases (pneumonia and septicæmia arising from a bed sore). In one case an injection of 0.4 gm. of salvarsan was given in a case of aortic aneurysm. Death occurred on the ninth day. Post mortem, in addition to the aneurysm, infarcts of the spleen and kidneys and pneumonia of the left base were found.

In three other cases death could not be attributed to the treatment, as the injection was given when the patient was moribund or in a hopeless condition, usually to satisfy the friends. In

another the patient was in an advanced stage of paralysis and had had three attacks of apoplexy. Death occurred with symptoms of cardiac paralysis on the fifth day after the injection, but Martius attributes it to the disease and not to the treatment.

In a case of syphilis complicated by severe diabetes, coma appeared a few hours after the injection and proved rapidly fatal. In another case death occurred from rupture of a deeply seated, unsuspected thoracic aneurysm, while the injection was being made. Though these may be coincidences, it is safer to regard severe diabetes and aneurysm as contra-indications to the treatment.

In a woman, aged 56, with aortic regurgitation secondary to syphilitic aortitis there were attacks of angina pectoris. After failure of mercurial inunctions 0.5 gm. of a neutral suspension of salvarsan was injected subcutaneously between the scapulæ. The anginal attacks disappeared for a time, but a fortnight later a mild attack occurred. On the next day she was discharged from hospital. Two days later—19 days after the injection—she died suddenly. The writer's interpretation of this case is that the early recurrence of the anginal attacks was due to insufficient dosage or deficient absorption, which is not uncommon under subcutaneous administration. Numerous examples of the good results of salvarsan in metasyphilitic circulatory diseases—especially angina pectoris—have been published.

In a case of locomotor ataxy combined with syphilitic aortitis, dilatation of the aorta, and cardiac hypertrophy, an intragluteal injection of 0.6 gm. of salvarsan for the relief of gastric crises was given without effect. It was otherwise well borne, but severe hæmorrhagic pemphigus appeared and proved fatal three weeks later. Post mortem the heart showed only secondary hypertrophy. Prof. Ehrlich regards the combination of locomotor ataxy and diseases of the heart and vessels as contra-indications to salvarsan treatment.

There remain 7 cases in which death occurred at varying intervals after the injection of salvarsan with symptoms of sudden or progressive heart failure. In three of these there were manifest signs of disease of the heart or vessels, although the cardiac disease appeared to be completely compensated. In two cases there was aortic regurgitation which had given rise to no symptoms. In one case a ringing aortic second sound was heard, but there were no cardiac symptoms. In one case slight precordial pain was present, with no physical signs of heart disease. In three of the seven cases the heart was held to be healthy. Nevertheless, in all 7 cases more or less extensive pathological

changes in the heart or circulatory system were found post mortem.

The dose of salvarsan and the method of injection were not uniform in these 7 cases, and in most no information was forthcoming as to the reaction of the solution. In one case fatal collapse occurred four hours after an intravenous injection of salvarsan. Nephritis, cardiac hypertrophy, arteriosclerosis, cerebral hæmorrhage, combined with paralysis present during life, according to the writer, accounted for death. In another case hypoplasia of the heart and aorta was found post mortem. With a perfectly healthy heart the writer says that salvarsan may be injected in out-patients, but as slight degrees of heart disease may be overlooked it is desirable to keep all patients in bed for some days. Thus in one fatal case a woman, immediately after an intravenous injection, performed heavy garden work; she died suddenly three days later with pulmonary embolism. In the remaining five cases there were syphilitic aortitis, coronary sclerosis, and myocarditis. In all death was attributable to the toxic action of salvarsan on a diseased myocardium.

Even with hearts slightly weakened by alcohol or tobacco, alarming, though not fatal, collapse has occurred. Diseases of the blood vessels alone are not necessary contra-indications. This is proved by the good results obtained in uncomplicated syphilitic angina pectoris. But the combination of syphilitic aortitis with coronary sclerosis and myocardial degeneration is especially dangerous. In no case should salvarsan be injected if the administration of chloroform would be considered dangerous.—*The Medical Review*.

OBSTETRICS AND GYNAECOLOGY

IN CHARGE OF ADAM H. WRIGHT, K. C. M'ILWRAITH, FRED.
FENTON, AND HELEN MACMURCHY.

Vesicular Mole: Missed Abortion

Hallauer (*Zentralbl. f. Gynäk.*, No. 3, 1911) induced labor in a woman, aged 35, in the tenth month of pregnancy. The uterus had remained stationary in size for four months. Missed abortion was diagnosed. A firm mole, bigger than a fist, was expelled; it was pyriform, taking the shape of the uterine cavity, and measured $5\frac{1}{2}$ in. in vertical diameter. Its surface was quite smooth. When laid open its interior was found to be spongy in the middle and quite firm towards the periphery. The amniotic cavity lay in the upper third, the amnion itself remained, but there was no trace of a foetus. The spongy tissue around the cavity could be seen, without the aid of the microscope, to be made up of characteristic vesicles, as big as small peas. Under the microscope some of the vesicles appeared degenerate, others perfect; as a whole they were dropsical. The syncytium was in parts overgrown and elsewhere wanting. Blood and fibrin lay between the vesicles. Thus the mole was of the hydatidiform or vesicular type, and it had become firm and fleshy owing to bleeding, shrinking and compression. Hallauer adds that, according to monographs, a vesicular mole is, as a rule, expelled between the third and fifth month. In about 4 per cent. it is retained till the tenth month, but a few cases are recorded where it remained in the uterus for a month longer.—*B. M. J.*

Appendicitis During Pregnancy and Labor

A. H. Bill (*Cleve. Med. Jour.*, 1911, x 676) says that the treatment of this complication during the first three months should be the same as in the nonpregnant state, but if immediate operation is not performed and the patient is carried through the attack without removal of the appendix this should be done soon afterward, since the danger of recurrence later in pregnancy at a more dangerous period is great. After the third month the treatment should be immediate removal of the appendix as soon as the diagnosis is made since the high mortality of this complication is due to delay. This applies especially to the later

months when, due to the greater congestion and increased intra-abdominal pressure, the inflammatory changes are apt to be very marked, with early perforation. The indication for operation should apply to the mild cases as well as the severe ones and no plan of delaying to determine the severity of the attack is justifiable. If an attack of appendicitis comes on during labor the uterus should be emptied without much delay and then the appendix removed. If the attack comes on before labor even if at full term, the uterus should not be emptied until after the appendix has been removed or the abscess drained if pus has developed. If general peritonitis is already present the uterus should first be emptied by the vaginal route by a rapid method and then the abdominal operation performed.

The same necessity for rapid interference holds good when symptoms of appendicitis appear during the puerperium. In a large percentage of cases the exacerbation is due to the breaking of adhesion or rupture of a pus sac by the sudden decrease in size of uterus.—*Amer. Jour. of Obst.*

The Influence of the Automobile Upon Pregnancy and Pelvic Disorders

Inasmuch as the automobile has grown to be a vehicle of every day use, it is of value to study the effect of the various physical factors which occur in automobile riding and their relation, if any, to diseased conditions in those who habitually use this method of transportation. J. C. Edgar (*American Journal of Obstetrics*, June, 1911) has closely studied this subject in connection with obstetrical and gynæcological conditions. He quotes Le Gendre to the effect that in a study of the hygienic and therapeutical value of the motor car many factors must be reckoned with, speed, vibration, the douche of the air striking the face, chilling, dust, prolonged sitting position, etc., the results being physical, psychical, and at times pathological.

It may be said that there are, broadly speaking, more traumatism, more vibration, more jars associated with the motor car than with the horse drawn vehicle. As Edgar points out there is no difference between the two types of transportation as to vibration, or, if any, it lies in favor of the automobile by reason of the pneumatic tires. This holds good only so long as the speed of the two vehicles is identical. Mechanically speaking, the impact of moving bodies varies with the square of the velocity, hence it is readily understood that even small differences in

speed will produce marked increase in shock and jarring. When it is considered that a horse drawn carriage will rarely average more than six or eight miles an hour, while, under the same conditions, an automobile will average from twenty-five to forty miles, the enormous increase in vibration is at once made manifest.

Upon the whole it may be said that the automobile should be used, during pregnancy or in the puerperal state, with great discretion and always under the supervision of the physician; moderate indulgence is not usually harmful, except in the nervous individual and at the time of the menstrual period, but excessive fatigue and prolonged trips over rough roads should always be avoided.—*N. Y. Med. Jour.*





JAMES F. W. ROSS, M.D., L.R.C.P. (Lond.)

Born in Toronto, August 16th, 1857

Died, November 17th, 1911

Editorials

THE INTERNATIONAL MEDICAL CONGRESS

The Seventeenth International Congress of Medicine will meet in London, England, in 1913. The Congress assembles every four years, the last meeting being at Budapesth in 1909. Sir Thomas Barlow, Physician to His Majesty the King is President of the 1913 meeting. The profession in the Overseas Dominions will feel particularly gratified that a man of such professional attainments and broad imperialistic sentiments as Sir Thomas has been selected as President. We understand that the profession in the self-governing parts of the Empire are to be invited to co-operate with that of the United Kingdom in making the organizing committee representative of the whole British Empire. At an early date we hope to be able to publish the rules of the Congress and the names of the various sections with their principal officers.

THE DEAF CHILD

Dr. James Kerr Love, of Glasgow, known to the profession as an unrivalled authority on the education and care of the deaf, has published a book (John Wright & Son, Bristol) with the above title. It is not often that one finds a book on any subject more thorough, clear and practical than this—in one word—more scientific.

Dr. Love wisely considers that, if at all possible, deaf children should mingle freely and continuously with their more fortunate fellows, and hence, does

not approve of compelling all deaf children to be separated in a class by themselves or at a special school. He is also able to prove to the satisfaction of any intelligent person that oral or lip reading is very far ahead of manual language, and therefore it should be thoroughly taught to all children who are or seem likely to become deaf.

A good deal of the research work attended to in the volume was done under the Carnegie Trust Foundation, and both the Trust and Dr. Love have every right to be satisfied and gratified by the result. The book should be widely read, and will be the best authority on the subject for years to come.

CONVENTION OF THE WOMEN'S INSTITUTES

Many interesting subjects were discussed at the recent Convention of the Women's Institutes of Ontario, held in Convocation Hall, in the City of Toronto. Dr. W. T. Connell, of Queen's University, Kingston, in the course of a lecture on "Water Supply," divulged some startling facts as to the character of the drinking water in rural districts of Eastern Ontario. Out of a thousand samples of well water which he examined, two-thirds were polluted, that is, they showed the presence of bacterial organisms from the intestinal canals of man or beast. In one village alone he found over 80% of the wells polluted. He stated that in consequence of such pollution of the water there was considerable typhoid fever in the district referred to.

Mrs. D. W. Parsons, Forest, Ont., in the course of a lecture entitled "A Woman's View of Life," spoke in very plain terms about certain evils of the

present day. She said, "We are now living in a time of great national peril. Women everywhere are refusing to be mothers, that is, they are using everything known to science to prevent motherhood. There are men and women living in Ontario to-day who are living lives of nothing less than legalized prostitution. We cannot hope to retain our self-respect if we live like that. If we believe we are 'Temples of the living God,' how dare we descend to such low degradation."

Dr. Helen MacMurchy, of Toronto, told her audience that it was their business to help solve the vexing social problems of which that of proper housing was most pressing. She referred to the Bill rejected at the last session of the Provincial Legislature, asking power to enable large towns and cities to clear land outside their limits for the purpose of town planning. She asked for their sympathy and assistance for a Bill, which it is proposed to bring up at the next Legislature, to enable us to buy land around our towns and cities, which we can divide according to a definite plan, having a park here, playground there, and so on.

DR. HUGHLINGS JACKSON

Most of Canadians who have walked the different hospitals in London, England, during the last forty years have lively recollections of Dr. Hughlings Jackson.

The *New York Medical Journal* in a recent issue expressed the opinion that the medical world has lost one of its greatest men in the death of Dr. Hughlings Jackson. The *Journal* goes on to say that the term

Jacksonian epilepsy gives but the faintest conception of the great work done by him in orienting the nervous centres.

He became attached to two institutions in 1862, the London Hospital, and the National Hospital for the Poor, Aged and Epileptic. The *Journal* in speaking of his work, says: "He began in the vigor of his youth, in these two great hospitals, the clinical observations that were so careful and painstaking, and that, under his master genius, formed the basis for a wholly new conception of brain functions."

"In an epoch-making series of lectures in 1884, on 'Evolution and Dissolution of the Nervous System,' he showed the full importance of the discovery made by him nearly twenty years before—that cerebral lesions affect movements and not muscles. He described three levels of evolution in the nervous system, each rise in level being characterized by a change from the general to the special in function, and from the simple to the complex. Dissolution takes place in inverse order; the highly specialized functions disappearing before those that are simpler and more general."

FINAL MEDICAL EXAMINATIONS

CANDIDATES WHO ARE NOW ENTITLED TO PRACTICE IN ONTARIO.

The following named candidates have passed the final examinations of the College of Physicians and Surgeons of Ontario: W. E. Ainley, Bridgewater, N.S.; R. A. Belfry, Orillia; L. C. E. Beroard, Ottawa; H. Buck, Port Rowan; W. A. Burgess, Leamington; E. P. Byrne, Kingston; R. A. Caldwell, Murillo; A. A. Campbell, Shanty Bay; J. P. Campbell, Arthur; J. E. Charbonneau, Chelmsford; H. S. Crowe, Central Onslow, N.B.; W. J. Defries, Toronto; A. S. Duncan, London; J. C. Eager, Watertown; J. C. Gillie, Chapleau; W. N. Gilmour, Brockville; E. M. Guest, Elginfield; W. R. Hambly, Napanee; D. A. Hopper, To-

ronto; C. G. Imrie, Whitehall, Mich.; A. B. James, Brantford; H. E. Johnson, Randolph; J. B. Jupp, Toronto; J. A. Kearns, Barrie; H. D. Lees, Niagara Falls; H. H. Murray, Toronto; W. A. McCracken, Cornwall; E. L. McIntyre, Forest; C. R. McKay, Port Colborne; T. W. Nancekivell, Woodstock; J. M. Nettleton, Penetanguishene; T. R. Pickard, St. Mary's; J. T. Phair, Toronto; M. A. Pollock, Toronto; J. M. Ravary, St. Amour; C. Sheard, jr., Toronto; R. H. Sheard, Toronto; G. B. Stalker, Walkerton; S. E. Thompson, Kingston; M. U. Valiquet, Ottawa; W. S. Verrall, Chatham; G. S. Weir, London; F. W. Weston, Campbellford; J. C. Woods, Aylmer East; and R. W. Young, Waterloo.

Personals

Dr. Kenneth Bulkley, of New York, visited Toronto Nov. 15th.

Dr. Jane P. Sproule has commenced practice in oto-laryngology at 47 Grosvenor Street, Toronto.

Dr. J. Alex. Hutchinson has been appointed Associate Professor of Surgery and Clinical Surgery in McGill University.

Dr. J. M. Elder has been appointed Assistant Professor of Surgery and Clinical Surgery in McGill University, Montreal.

Dr. J. Orlando Orr left Toronto Nov. 9th, and sailed Nov. 11th from Montreal for Liverpool. He expects to return to Toronto in January.

Dr. Ernest K. Cullen announces that he has offices in the Washington Arcade, Detroit, and will confine his practice to abdominal surgery and gynecology.

Dr. Charles Sheard, Jr., is still acting as House Surgeon at the City Hospital, Blakewell's Island, N.Y. He paid a short visit to his friends in Toronto early in November.

Dr. Chas. A. Hodgetts, of the Canadian Conservation Commission, has returned from Europe, where he attended the International Hygienic Exhibition in Dresden and the Congress on Infantile Mortality at Berlin.

Sir Thomas Boor Crosby, M.D., was inaugurated Lord Mayor of London, Nov. 9th. He is 81 years of age and is well known to many citizens of Toronto. Dr. Charles O'Reilly met him when in London last August, and tells us that at that time he looked remarkably well.

Mr. R. L. Borden's new ministry contains two doctors of the medical profession—Dr. Jno. D. Reid, Minister of Customs, and Dr. Wm. J. Roche, Secretary of State. Dr. Reid, who was born in Prescott, 1859, was educated at Queen's University, graduating M.D. in 1890. Dr. Roche, who was born at Clondeboyne, 1860, received his medical education at the Western University, London, Ont., and Trinity University, Toronto. He commenced practice in Minnedosa, Man., in 1893.

Dr. Edward D. Fisher, a well-known specialist in diseases of the nervous system, New York; Dr. Charles A. L. Reed, the eminent abdominal surgeon of Cincinnati, and Dr. Louis S. MacMurtry, the well-known abdominal surgeon of Louisville, Ky., attended the funeral of Dr. Ross. Drs. Reed and MacMurtry are both Past Presidents of the American Medical Association, and also the American Association of Obstetricians and Gynecologists. Dr. Ross was also one of the Past Presidents of the latter Association.

Book Reviews.

International Clinics. A Quarterly of Illustrated Clinical Lectures and especially prepared Original Articles, by leading members of the medical profession throughout the world. Edited by HENRY W. CATTELL, A.M., M.D. Volume III. Twenty-first series. 1911. Philadelphia and London: J. B. Lippincott Company. 1911.

The articles which appear in *International Clinics* are always full of profit and interest to the reader. Those in the present volume are no exception. Altogether, there are twenty-two papers, which deal with every branch of the profession. Not the least profitable of those published in the present number are two articles on medical economics, one "The Successful Practice of Medicine," by Thomas F. Reilly, the other "Economic Conditions Affecting Physicians," by H. B. Allyn. The younger practitioners in particular will find them of considerable interest. As literary productions alone many of these papers stand in the first rank, and, taken along with their scientific excellence, make delightful reading for the busy practitioner.

Clinical Diagnosis. A Text-book of Clinical Microscopy and Clinical Chemistry for Medical Students, Laboratory Workers and Practitioners of Medicine. By CHARLES PHILLIPS EMERSON, A.B., M.D., late Resident Physician the Johns Hopkins Hospital, and Associate in Medicine the Johns Hopkins University; Professor of Medicine, Indiana University School of Medicine. Third edition. Philadelphia and London: J. B. Lippincott Company.

The fact that this book has reached a third edition in the short space of five years would be sufficient evidence that it has won a distinctive place among medical text-books on this continent. The changes and advances that are so rapidly taking place in the laboratory side of medicine make what was new yesterday old to-day, and necessitate the revision of old theories and methods. The present volume has been considerably enlarged and contains all the methods which have been proved to be of service in the examination of the various body fluids and excreta. In clinical zoology and bacteriology, as Dr. Emerson points out, the greatest strides have been made, and this is amply reflected in the present volume. We commend the book heartily to both students and practitioners of medicine.

Correspondence

Editor CANADIAN PRACTITIONER AND REVIEW :

SIR,—After looking through many recent calendars of medical colleges I have reached the following conclusions:

1. That medical faculties which do the best and most practical work in fitting students for their duties at the bedside of their patients, are those who are educated by faculties of moderate size and made up in every teacher's case (whatever he may teach) of most carefully selected medical practitioners of good general and professional education in the entire profession, and possessed of marked teaching power.

2. That each branch of medical knowledge to be taught should be placed under the responsibility of a thoroughly competent teacher, and only to be interfered with in the discharge of his duties when he either becomes, from age or illness, or any cause, unable to continue to discharge them in such a manner as every good and competent teacher is expected to do.

3. To divide up subjects into sections, giving each teacher only a small part of a subject to teach, can only secure unsatisfactory, because very unequal and unpractical, teaching, and as a rule is injurious to medical classes.

4. Clinical work cannot be too abundant if it be well and conscientiously given, but is greatly more useful when one or more good, full didactic courses of lectures, carefully prepared and well delivered, have been listened to in all practical subjects—indeed unless this is done clinics are largely useless, for the majority of students will not read up their work alone, as they might be expected to do—probably not more than 5 to 10 per cent. of average students would, whatever they may promise, carry out their promises; and besides the impressiveness of really earnestly delivered good lectures is one of the very best ways of urging men to study. This has been my life experience, and is, I believe, that of all good medical teachers I have ever known. The only men I ever knew opposing didactic teaching are those who were unable, in one or in many ways, to make it interesting to the classes they address.

MEDICUS.

Obituary

JOSEPH BELL

Dr. Joseph Bell, well known even in Canada as "Joe Bell," the supposed prototype of Conan Doyle's Sherlock Holmes, died at his late residence, Edinburgh, October 4th.

RICHARD STANBURY, M.D.

Dr. R. Stanbury died at his home in Bayfield, Ont., Sept. 7th. He was born in Devonshire, England, and came to Canada in early boyhood. He graduated M.D. from Victoria University in 1865.

WILLIAM GEORGE WALKER, M.D.

Dr. W. G. Walker died at his home in Stratford, Ont., Sept. 11th. He graduated M.D. from McGill in 1892, and soon after commenced practice in Stratford. His death was caused by carbolic acid poisoning, he having taken carbolic in a mistake for cough mixture.

MR. E. ROSS DUNCAN

The many friends of Dr. J. H. Duncan, of Chatham, Ont., were very much grieved to hear of the death of his son, Ross, at Waukesha, Wis., November 2nd. He commenced to study medicine in the University of Toronto in the fall of 1908, but was compelled to give up his studies on account of ill health in 1909.

ALEX. PRINGLE, M.D.

Dr. A. Pringle died suddenly at the home of his sister, Mrs. Carman, Cornwall, Ont., Oct. 25th. He practiced during recent years in Northfield, Minn.

JAMES F. W. ROSS, M.D., L.R.C.P., LOND.

Dr. J. F. W. Ross, of Toronto, was injured by an automobile accident, Nov. 15th. He was driving the car himself with his chauffeur sitting beside him. He was going out to Cookstown to perform an operation, and had just passed through Richmond Hill when the front wheel of the car was caught in a rut and the machine turned turtle. News came to his friends that he and his chauffeur were badly injured, and had been taken to the residence of Dr. Langstaff, Richmond Hill. On the following day we heard two ribs were broken and Dr. Ross was suffering somewhat from shock. The next afternoon, November 17th, that is two days after the accident, Dr. Ross died suddenly and unexpectedly in Dr. Langstaff's house. The immediate cause of death was supposed to be an embolism.

Dr. Ross was born in Toronto on August 16th, 1857, the son of Dr. James Ross, and a Torontonion of the fourth generation, his grandfather having come to Canada from Ireland in 1780. He graduated M.B. from the University of Toronto in 1878. After spending a year in the Toronto General Hospital as one of the house surgeons, he went to England in 1879, and became L.R.C.P. in 1880. After some further post-graduate work in Berlin and Vienna he returned to Toronto and commenced practice in 1881. He returned to England in 1891 and acted as assistant to Mr. Lawson Tait, of Birmingham, for six months. He then went to Zurich, where he engaged chiefly in laboratory work for about three months. On his return to Toronto he gave up general practice and devoted himself to gynæcology and abdominal surgery. He soon became recognized as one of the ablest abdominal surgeons in North America.

At the time of his death he was Professor of Gynæcology in the University of Toronto, and head of that department at the Toronto General Hospital, and Consulting Surgeon to St. Michael's and St. John's Hospitals.

Dr. Ross always took a very great interest in matters pertaining to the welfare of the medical profession. We have to thank him especially for the great work he did in connection with the Academy of Medicine, Toronto.

AN APPRECIATION OF DR. ROSS

JOHN HUNTER, M.B., TORONTO.

There is something in common between human life and that of the trees in the forest. In the life of the latter the seed may be blighted, the tender shoot crushed, the sapling broken, the giant oak uprooted, while the old tree topples over through decay. The woodmen pass by the immature, and the old, but when they come to the fallen oak they stop and try to estimate its worth. The storm has arrested its function as a tree, but the product of its life remains as valuable timbers, to be used, it may be, in the construction of a "dreadnought" to protect the nation; in the rearing of a viaduct for transporting merchandise; in decorating a palace, or in building a humble cottage for the toiler.

In human life, death comes to the embryo, to the child, or to the youth, and brings disappointment, or anguish to the home, but the problem of "what might have been" if such a life had been spared remains unsolved. Death to the aged if not soon longed for, is very often a means of relief from infirmity and suffering. But when it comes—as in the case of Dr. Ross—to one in the full vigor of manhood, and while in the discharge of onerous duties it causes consternation. Men stop each other and say: "Isn't it terrible," "I was shocked," "Awful," "Cannot realize that he is dead." The life of Dr. J. F. W. Ross, as a surgeon and as a citizen, is ended, but the product of his life, in the character he built up, and in the work he accomplished, remains a great legacy to the profession of which he was such a distinguished and honored member.

Leaving for other and much more competent pens to sketch his life from different perspectives, the writer confines himself to a very brief reference in regard to one or two outstanding traits in Dr. Ross' character. (1st) Concentrated and unselfish devotion to medicine. Attractive personality, health, culture, wealth—attributes that would have given him rank in any other calling—never lured him from the duties and drudgery of his chosen vocation. In the broadest acceptance of the term his love for medicine was purely unselfish. He early acquired a foremost

place in his profession. His fellows bestowed on him all the honors at their command. His reputation enabled him to earn a large income, and great wealth was a family inheritance, however, none of these fortuitous circumstances quenched enthusiasm for his work. He fell while in the strenuous discharge of duty.

(2) His ideals were of a very high order. He was never known as an office seeker. The selfish interest "How will this affect me," found no place in his thoughts. We have only to turn to any of his inaugural addresses to find how very high his ethical, literary and scientific standards for medicine were. In office, as in private life, his great purpose was to advance medical knowledge. The comforts of an attractive and happy home, the lure of the social circle, of the club, or the frenzy of sports—none of these kept him away from the medical meeting. In propagating his ideals and convictions his conduct was characterized by the open mind, the humanitarian outlook, tireless industry, courage, alertness, tact.

For his family who did so much to mould, enrich and inspire his life, the sincere prayer of thousands of sorrowing friends is "Jesus, Saviour, pilot them."

We stand too near his time to form a full estimate of all that Dr. Ross stood for in the uplift of medicine, and as for what he proposed doing, may we not share the hope of the poet who sings:

" Safe in the care of heavenly powers,
The good he dreamed, but might not do,
Lost beauty, magically new,
Shall spring as surely as the flowers
When, 'mid the sobbing of the rain,
The heart of April beats again."

Selections.

Treatment of Flatulence

Sir Robert W. Burnet gives the treatment for flatulence (*Practitioner*) as follows:

Nux vomica is one of the most useful remedies in flatulence, and it may be given in tincture or in pill with a quarter of a grain of capsicum and a couple of grains of compound rhubarb pill. Bismuth is of use in many instances, with an alkali such as sodium bicarbonate and a bitter infusion. Salicin is not used so much as it should be; given in five or ten grain doses in water before meals it is often very helpful. Pepsin seems distinctly indicated, but it is often disappointing, and at the best it must be looked upon more as a palliative than anything else. Pancreatin, too, does not give the relief in all cases that we should expect from it. Sodium salicylate with liquor pepticus, *nux vomica*, and spirit of chloroform seems useful in a certain number of cases. Extract of malt given with or just after meals helps in those cases where the digestion of starchy foods is obviously difficult. A few drops of dilute hydrochloric acid in water, shortly after meals, is often decidedly beneficial. In some cases iron and quinine seem to be indicated, but in many cases it will be found how difficult it is to get them to agree, especially in the earlier stages. When improvement has set in they may be tried with more confidence. A pill which is often well borne consists of a grain of reduced iron, with extract of *nux vomica*, quinine, and a pill of compound rhubarb. It acts as a tonic and also as a mild aperient. It may be varied by a grain of pepsin and a twentieth of a grain of arsenous acid in place of the quinine, and it is useful in anæmic subjects. Calomel in very small fractional doses, given twice daily for a few days at a time, has often very good effect, and where there is sluggish action of the liver a pill of compound rhubarb should be given occasionally and followed, if necessary, by a mild saline in the morning, but anything like strong purgation should be avoided. Where the distension is chiefly in the bowels bismuth, salicylate of bismuth, beta naphthol and salol, in cachet, give at least temporary relief. Lavage is not usually needed in these cases, but where there is much accumulation of mucus it is very helpful by clearing the stomach and thus giving a fair start to other treatment. In acute attacks of flatulence hot water, with aromatic spirit of ammonia and spirit of chloroform with perhaps a teaspoonful of brandy, often

relieves the tension and spasm. Sometimes a drop or two of oil of cajuput in mucilage has a very good effect.—*New York Medical Journal*.

Suprarenal and Pituitary Extracts

Suprarenal and pituitary extracts, both agents of comparatively recent introduction, are being widely used. As they are often recommended for the same or similar conditions, and as their physiological actions are in many respects similar, it may be well to call attention to some of the differences as well as of the resemblances, as revealed by recent researches. Both cause a rise of blood pressure and marked contractions of the uterus; both have a tendency to cause glycosuria; both are used as vascular and uterine stimulants. These effects are, however, at least in many cases, due to fundamentally different causes; a knowledge of these may aid in defining more accurately the uses of the extracts.

It is now possible, through one of the most important of recent generalizations in physiology and pharmacology, to discuss nearly all of the physiological effects of the suprarenal extracts, or adrenalin, from one standpoint, its effects upon the endings, or, more correctly, the myoneural junctions of sympathetic nerves. Throughout the entire body the effects of adrenalin are the same as those of stimulation of the sympathetic nerves. The action of pituitary extracts, on the other hand, has not, so far as is known, any relation to the sympathetic nerves; in the case of organs composed of plain muscle the latter is stimulated directly.

As is well known, there are three important vascular areas which are not controlled, or only very weakly controlled, by vasoconstrictor nerves, the brain, lungs, and heart. Adrenalin has little, if any, constricting action upon the vessels of these organs; it is said to be almost useless in operations on the brain. The vessels of these areas are, however, contracted by pituitary extract. After a very brief period of stimulation the heart is weakened by pituitary extract; this effect seems to be due to the constriction of the coronary vessels. The weakening of the heart from pituitary extract causes a fall of pressure in the pulmonary circuit; the general vasoconstriction causes a rise in systemic pressure which counteracts the tendency to anæmia of the medullary centres which results from cardiac depressants. Wiggers (*Archives of Internal Medicine*, July 15th) believes that this combination of actions peculiarly adapts the pituitary extract for use in hæmoptysis. The fact that adrenalin, through its

stimulating action on the heart, increases the pressure in the pulmonary circuit would contraindicate its use in certain cases of pulmonary hæmorrhage.

Both adrenalin and pituitary extract have been warmly recommended in uterine atony and post-partum hæmorrhage. Many recent writers (Foges and Hofstätter, Hofbauer, Neu, and Stern for example) have laid special emphasis upon the value of subcutaneous or intravenous injections of pituitary extract, maintaining that this drug has advantages over ergot. When adrenalin causes uterine contractions it is from a stimulation of sympathetic nerve endings; pituitary extract stimulates the muscle cells directly. Dale found that adrenalin normally causes a relaxation of the uterus in some (non-pregnant) animals; this also occurs in other animals (pregnant as well as non-pregnant) after large doses of ergot.

If these conditions hold for man, the use of adrenalin with ergot or after it would be contraindicated, whereas that of the pituitary extract would not be.

Pell, Klotz (*Münchener medizinische Wochenschrift*, 58, p. 1119, 1911), and others have recommended pituitary extract in intestinal paresis after operation: it causes a contraction of the smooth muscle. Adrenalin, on the other hand, causes relaxation of almost the entire alimentary tract (in accordance with the sympathetic innervation) contracting, in most animals, only the sphincters.

Both extracts have important relations to carbohydrate metabolism: adrenalin causes glycosuria, pituitary extract a lowering of carbohydrate tolerance and frequently glycosuria. Borchardt (1908) found glycosuria in forty per cent. of 176 cases of acromegaly (hyperpituitarism). Goetsch, Cushing and Jacobson (1911) found increased tolerance for carbohydrates in conditions of hypopituitarism. They consider it a valuable aid in diagnosis and a useful guide in therapeutics: in cases of pituitary disease with increased carbohydrate tolerance (as in late cases of acromegaly) the administration of pituitary extracts is indicated; in cases with diminished carbohydrate tolerance, or with glycosuria (as in early acromegaly) such medication is contraindicated.

There are indications of a relation between lowered function of the suprarenals and carbohydrate metabolism: the sugar content of the blood in Addison's disease is said (Porges) to be so lowered as to account in part for the characteristic asthenia; the latter is said to be relieved by the administration of sugar. The nature of the relation of the pituitary to carbohydrate metabolism is obscure.

Bab has recently (*Münchener medizinische Wochenschrift*, August 22nd) advocated the use of pituitary extract in osteomalacia, in which suprarenal extract has been much used; both glands are known to be antagonistic to the sex glands, and, according to Fehling and others, there is superactivity of the ovaries in osteomalacia.

It will be some time before some of the suggestions as to the therapeutical uses of these drugs are thoroughly tested, but these illustrations show what a wealth of physiological data concerning them is being collected.—*New York Medical Journal*.

Clinical Thermometer as a Possible Disseminator of Some Communicable Disease

Beasley (*J. A. M. A.*) has made experiments with twenty-four hour cultures of *Bacillus prodigiosus* and *Bacillus pyocyaneus*, grown in Dunham's solution, to infect thermometers. The general scheme of the experiments was to rinse the mouth for half a minute with the culture of *Bacillus prodigiosus*, and a sterile thermometer was then placed under the tongue. At the end of a minute the thermometer was removed and cleaned in nine different ways. Twenty-four, forty-eight, seventy-two and even ninety-six hours later the bacilli were still discovered on the thermometer. It would therefore seem necessary that physicians should keep their thermometers immersed in a true disinfectant if they would eliminate this source of danger to their patients. Formaldehyde solution would be a most satisfactory substance to use, as, in contradistinction to phenol (carbolic acid), it does no damage to the etchings of the thermometer. Until the city and State health departments give some attention to this subject, everybody who can afford to do so should provide himself with a trustworthy clinical thermometer, in order to avoid the use of an outside one which might prove to be the origin of some communicable disease.—*New York Medical Journal*.

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